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KNOWLEDGE

FOR THE PUBLIC

-William Sheridan-

The 3rd in a trilogy on Knowledge Policy, from the author of

HOW TO THINK LIKE A KNOWLEDGE WORKER

and

HOW TO GET RESULTS IN KNOWLEDGE WORK

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Preface

Producers and disseminators of new knowledge should report their research objectives and results to the public in a manner that is easily understandable and readily usable.

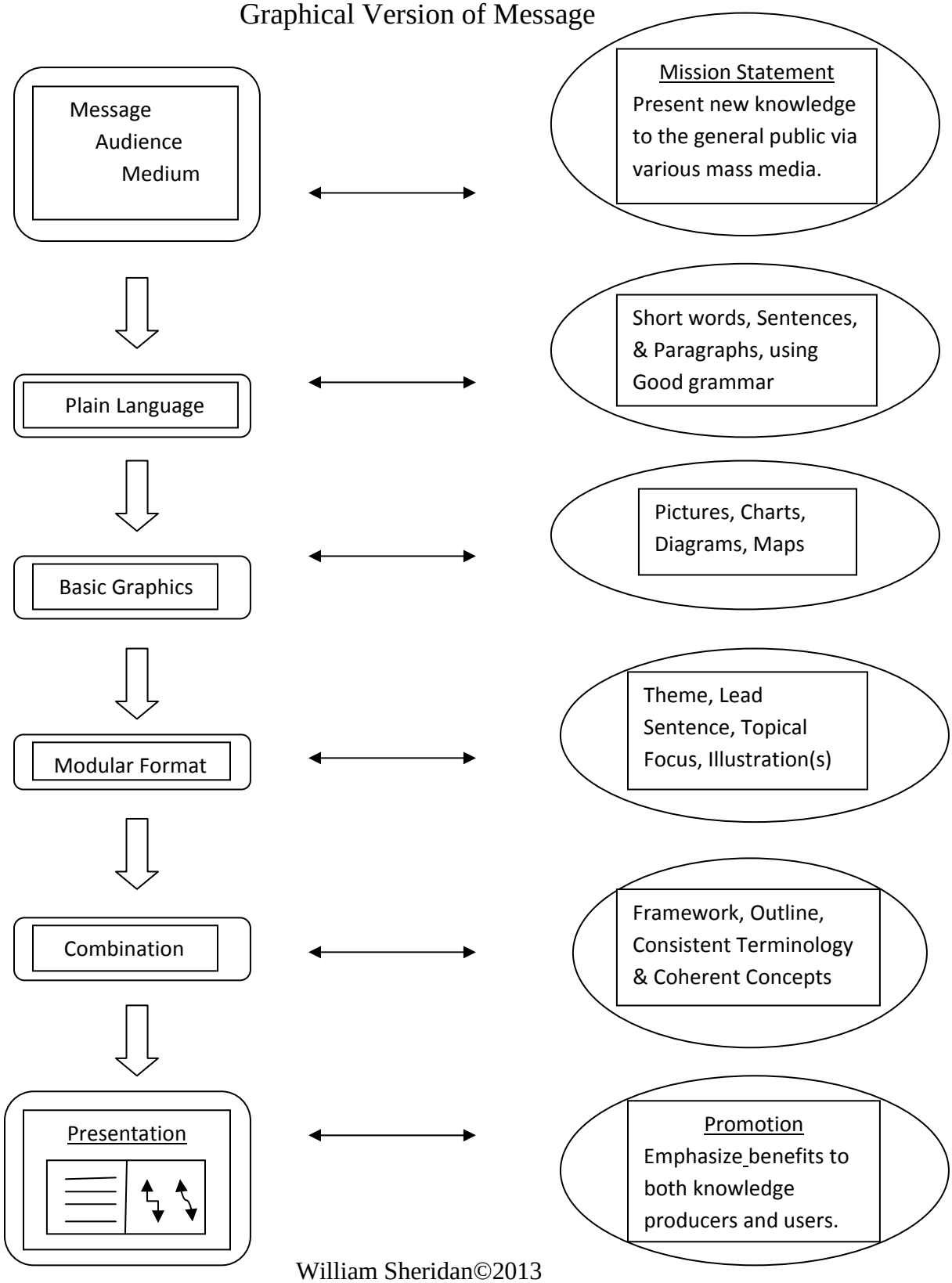
Public investment supports a large proportion of research costs, and by accepting such support the research community incurs an obligation to provide value-for-money in the form of usable information to the public.

Every research team should include someone in the role of a Public Information Officer (PIO). This person would, among other things, draft a media release that describes and explains the results and implications of each and every research project so that general readers can comprehend the relevance of the results to their lives.

Some people believe that many forms of knowledge are inherently complex and inaccessible to the public. But as knowledge aficionado Alfred North Whitehead explained (*Adventures in Ideas*, 1933), this is a fallacy. *"It is a mistake to suppose that, at the level of human intellect, the role of mental functioning is to add subtlety to the content of experience. The exact opposite is the case. Mentality is an agent of simplification..."*

How should communications to the public be composed? The various aspects of this challenge have been studied for some decades now, and the results can be simply stated. Messages to the public must consist of a judicious blend of three communication techniques: (1) Plain Language; (2) Basic Graphics; and (3) Modular Format.

Plain Language consists of short words, short sentences, and short paragraphs, all using correct grammar. **Basic Graphics** employs maps, diagrams, charts, graphs and pictures, for purposes of illustrating the concepts in the text. **Modular Format** requires that document sections originate with an outline, be situated within a conceptual framework, be consistent, and be thematically self-contained. Each of these techniques is usually practiced in isolation – what is now needed is a paradigm that will describe and illustrate how to integrate them into a general approach. Development of that paradigm is now underway. Researchers of the world unite; it's now time to join the next communication revolution.



Introduction

The way to effectively present knowledge to the public is to focus primarily on (1) the purpose of the research, and (2) the benefits of the findings – the details of the scientific method are irrelevant for the majority. This book will be of value to all those who will be affected by the proposal: the Research Community (changes in their accountability requirements); the Tax Policy Community (changes in grants, tax expenditures, and reporting regulations); Public Information Officers (changes in the structure of their knowledge news releases); the Communications Policy Community (changes in information transparency and knowledge accessibility); and the General Public (changes in their demands for knowledge news, and their uses of that news).

As this book will advocate to Public Information Officers, the form of each module of this book will follow the format of the aforementioned Preface. Most sections will consist of two pages, containing both text and illustrating graphics. The beginning sentence will be a strong statement of the objective of the entire module, and the remaining material will "unpack," "explain" and "illustrate" what the first sentence proposes.

There are two aspects of crafting communications to the public (or anyone else). There is the process of "knowledge engineering" and there is the product that is the outcome of "message design," namely the actual public communication. Some of the resistance to the proposal in the Preface arises from the concern that "popularizing knowledge" may be assigned to incompetent communicators, with the result that either the core concepts of the knowledge will be misrepresented, OR the public will continue to be mystified because the message is too complex for the uninitiated to comprehend. Either way, the money and effort expended on "presenting knowledge to the public" would continue to be wasted, and another attempt at social improvement would be discredited!

To allay the fears behind these two concerns, both the process and the product of "presenting knowledge to the public" must be deconstructed and reconstructed to the extent that the concepts involved will enable practitioners to: (1) process the content and context of the knowledge that will be summarized and generalized for public consumption; and (2) guide the actions of communicators as they craft the "knowledge announcement" messages to the public so that they will conform to a template that can be recognized and relied upon.

This book will NOT go into the particular details of either the substantive knowledge areas, or the particulars of good grammar or legible illustrations – it will focus on the concepts behind the process and the product. Practitioners will need to translate the guidance provided herein into the terms of their own specialties. But to communicate effectively they must think conceptually.

Knowledge connects everything, sometimes visibly, sometimes invisibly, sometimes explicitly, and sometimes implicitly. But until the invisible becomes visible, and the implicit becomes explicit TO THE PUBLIC, the effects of knowledge are only haphazard and ephemeral. It is time for information transparency.[1]

[1] W. Bennis, D. Goleman & J. O'Toole, Transparency: How Leaders Create a Culture of Candor, Wiley, 2008

PART ONE: THE KNOWLEDGE PROCESS

Overview

The only way to succeed in communicating with the public is if the information shows that you (1) know your message, and (2) know your audience. Effectively presenting knowledge to the public requires the mindset explained herein. Part One of the book looks at the process of "knowing your message." Part Two looks at the knowledge product that reflects "knowing your audience" when that audience is the general public. *Another key point about the process of writing is that it is intrinsically connected to the process of thinking; thus, clear and effective thinking usually brings about clear and effective writing (and vice versa).*[1]

What, in particular, is this *process of thinking*, and how is it connected to writing? It begins, and ends, with the idea of meta-knowledge! Meta-knowledge consists of concepts available to process information and guide action.[2] Thinking involves processing of information. Writing involves the guided action of transcribing symbols from thought to a medium.

The premise of this book, and the thesis of *How to Think Like a Knowledge Worker*, is that a set of core concepts underlies ALL substantive forms of thinking. Therefore, acquaintance with and application of these concepts can equip a writer with the "knowledge literacy" required to explicate any field of research. Writing which communicates new research findings will then flow from the understanding which those concepts provide. The accompanying diagram gives an overview of the concepts in question.

There are markets for information and knowledge products, just like there are markets for other types of products. But the awareness by the public that knowledge in any and all fields is readily available will very likely expand the markets that currently do exist for the various knowledge domains. A generally better informed and more knowledgeable public will, in turn, be able to anticipate, and pursue the benefits that the new knowledge implies. Nutritional and health news can be applied by the public to avoid ailments and enhance physical wellbeing.[3] More information about the ecological footprints of current products and processes can lead consumers to demand of producers that they be more environmentally accountable.[4] The overall result is that a more knowledgeable public is in a better position to demand more responsive public policies.

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[1] A.A. Gilpin & P. Patchet-Golubev, A Guide to Writing in the Sciences, University of Toronto Press, 2000, pg. 4

[2] W. Sheridan, *How to Think Like a Knowledge Worker*, United Nations Public Administration Network, 2008

[3] P.A. Balch & S. Bell, *Prescription for Nutritional Healing*, Penguin Publishing, 2010

[4] Daniel Goleman, *Ecological Intelligence*, Broadway Books, 2009

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<tr><td colspan="3">THE KNOWLEDGE DESIGN PROCESS (content)</td><td colspan="3">THE KNOWLEDGE DESIGN PRODUCT (format)</td></tr>
<tr><td colspan="3"></td><td>TECHNIQUES</td><td>COMPONENTS</td><td>APPLICATION</td></tr>
<tr><td rowspan="4">PREPARATION</td><td>Motivation</td><td>purpose</td><td rowspan="4">Plain Language</td><td rowspan="4">Short words, Sentences, Paragraphs, all with Good grammar.</td><td rowspan="13">Identify target audience;

Prepare draft for that target audience;

Analyze draft with Bullfighter;

Revise as Bullfighter indicates;

Test message on target audience focus groups;

Revise again if needed;

Re-test on focus groups;

Release message when understandable to focus groups</td></tr>
<tr><td>Flexibility</td><td>strategy</td></tr>
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CONCEPTUAL OUTLINE OF THE BOOK'S PROPOSAL
William Sheridan©2013

Anyone who wants a copy of my diagrams can e-mail me and I will send the diagram(s) as an attachment to my reply e-mail. (williamsheridan@rogers.com)

No food, either for the body or for the mind, is much of a meal unless properly prepared.[1] What is the proper preparation for food of the mind? Herein we will, not surprisingly, consider the case of the particular food for the mind called "new knowledge." What kind of preparation is necessary to discern the "nutritional value" of new knowledge?

There are four aspects of proper preparation. The first is motivation. Why is the design of knowledge products a worthwhile pursuit? The answer is that it all depends on the purpose for which the knowledge is being developed and disseminated. When and if the goal of the knowledge product is beneficial , then its development is worthwhile; when and if the goal of the knowledge product is detrimental, then its development is pernicious. The responsibility of good knowledge product design is to encourage worthwhile uses and discourage pernicious uses.

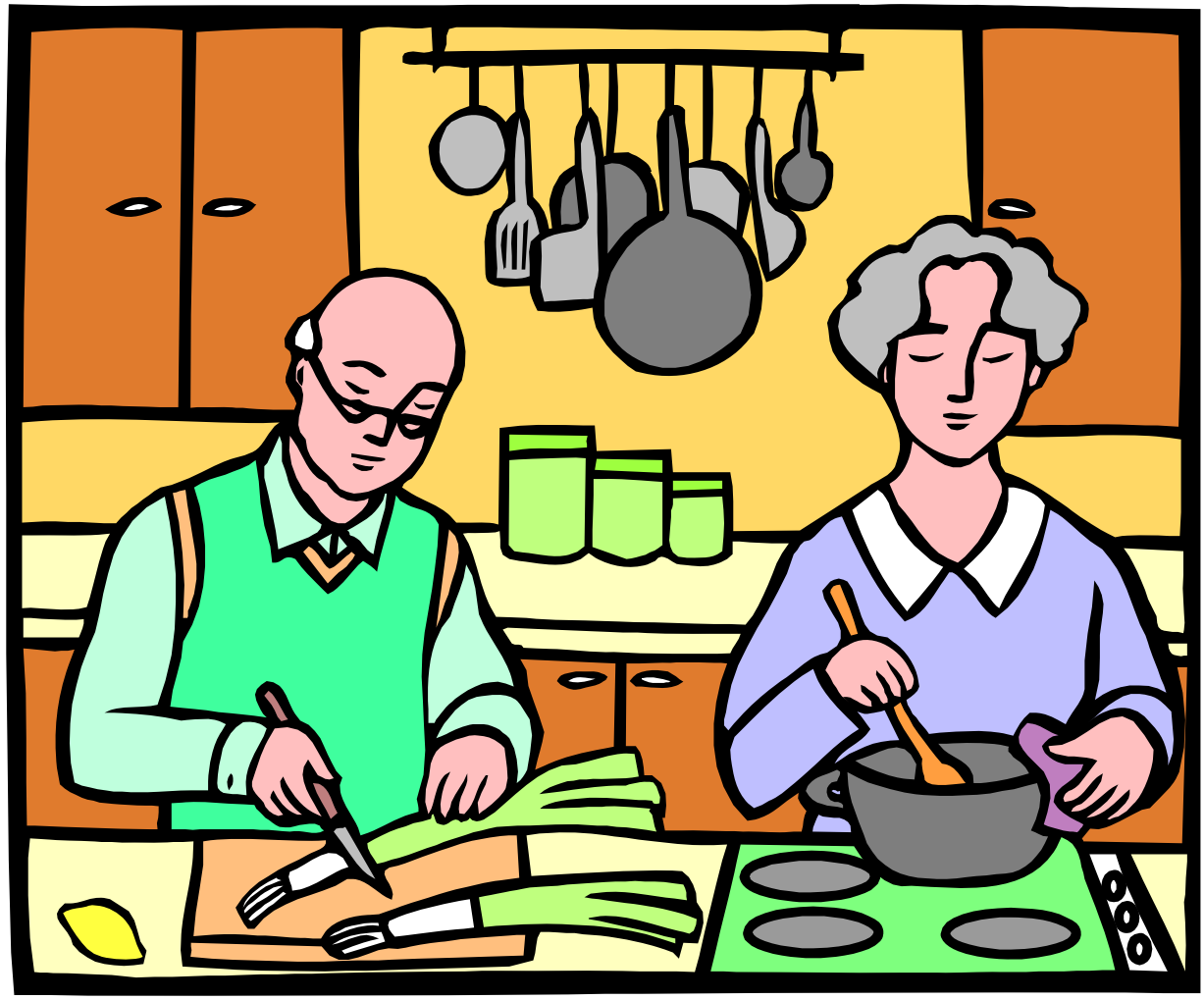
Next on the preparation agenda is the characteristic of flexibility. Although knowledge products should be beneficial and not detrimental, there are a variety of ways and occasions for beneficial pursuits. No one approach or outcome is ever sufficient – there are always a number of routes to travel during knowledge use. To accommodate this multiplicity, what is needed is a strategy or strategic outlook. The knowledge must be packaged so that its use can be flexible, depending on the initial and the changing circumstances in which users find themselves. Worthwhile goals must be supported by flexible tactics.

How can there be any assurance that good initial purposes will continue to be pursued? The price of fulfillment is "eternal vigilance." In practical terms this means that due diligence must be maintained. Due diligence is "taking the care that any reasonable person would" that the purpose, the mission, the objectives and the methods are consistently beneficial rather than detrimental. What due diligence involves is sustained commitment, not just for immediate outcomes but also for longer-term consequences. This is serious pursuit of principles.

The final aspect of preparation is follow-through. Besides due diligence during the course of knowledge product design, there should also be some tracking as the knowledge products find their way into the media and people's lives. Things that begin well can go off-track, or encounter unanticipated or unwanted results. As a result of follow-through, purposes may need to be re-thought, flexibility may need to be re-engaged, and commitments may have to be re-purposed, all in the name of sustaining benefits and repulsing detriments. Just as the effects of knowledge will persist, so should the tracking of those effects.

It has been contended that good preparation accounts for more than half of the likelihood of a project's success. Experience generally confirms this claim. What is then required is that the research findings that will be translated into a knowledge product must be competently deconstructed to reveal the conceptual basis for the anticipated public communication. Fortunately all this is learnable.

[1] Dr. M. Noakes & Dr. P. Clifton, The Total Wellbeing Diet, Penguin Books, 2005



Proper preparation requires the correct ingredients, the necessary tools and equipment, the appropriate training, and the recipe for what will be produced. In the case of food, all of these requisites are obvious, but in the case of communicating knowledge, these requisites are honoured more in the breach than in practice. Since most of us can speak and listen, read and write, give or take instructions, it seems to be assumed that delivering a message is a type of behaviour for which we have intrinsic capabilities. Sadly, not so!

Just as fresh food has a shelf-life, so does new knowledge. What spoilage is to fresh food, “old news” is to knowledge. To extend the shelf-life of food, a variety of packaging techniques are used. Packaging is just as necessary for new knowledge. Proper packaging of new knowledge can extend the news-value of a knowledge product considerably, by enhancing its relevance and applicability to a wider knowledge-consuming public. Different food packaging techniques are used for different kinds of foods. What we will develop herein are the different kinds of packaging techniques appropriate to new knowledge.

Using different motives when performing Knowledge Work, produces very different effects when developing and applying that knowledge. Furthermore, the most reliable indicator of motivation is not professed beliefs or values, but rather patterns of directed and sustained behaviour. We value whatever we pursue or shun with energy and persistence.[2] Moral rhetoric is just intentional rationalization for public consumption.

Historically, there have been a number of motives proposed for developing, deploying and applying new knowledge. It appears that Devine Inspiration was the first attributed motive. God (or the gods) shared knowledge with humanity in exchange for obedience, worship and various forms of social control. So, the "price" for this knowledge was the acceptance of instructions on how and why to use it. A special class of knowledge aficionados (the priesthood) became the mediators between God (or the gods) and humanity. The many variations of this "knowledge model" are with us still, but most of them have historically evolved from pantheistic to monotheistic paradigms. This knowledge model creates a closed field of operations, where access to knowledge is restricted by social status.

Since the Ancient Greeks in general, and Plato in particular, a rival model of knowledge has challenged Divine Inspiration. This was the Classical Philosophy model. Plato took his inspiration from the astrology of his day, and simply secularized it. He did, however, retain some of the metaphors from astrology. "As above, so below" was a typical injunction. Plato conceived culture as a set of "forms" that hovered in hyperspace above us, and that these forms shaped our intellectual endeavours. Here too though, the knowledge model was a closed field of operations, with access also restricted by social status. As Plato saw it, people were "intrinsically" of either "gold" or "brass" or "lead" character, with only the gold as capable of true knowledge or suitable to perform social governance.

These two "elite" models of knowledge were persistent rivals for some thousands of years, until the advent of the modern era. With the development of science (the systematic pursuit of knowledge through research), the Expertise Model arose. Through the acquisition of the proper education, training and experience, a person can discover and use knowledge. This is a semi-permeable model – there is room for people to enter the knowledge elite through persistent effort, but the terms of entry are specified by the existing elite membership.

As a legacy of modernity, a fourth knowledge model has also developed over the years, implicitly and unofficially. This has been given a variety of labels, but can most readily be recognized by the name Knowledge Democratization. This knowledge model is the child of mass media effects. For many years publishers have recognized that there is a market for "popularized science and technology." Books, newspapers, magazines, movies, television, radio, and now the Internet, all have market segments for popular science. This is an open knowledge model, and in recognition of this openness it has been recently been renamed Radical Transparency. Radical Transparency is the concept that all knowledge should be open to everyone who cares to access it. The combination of infinite computer storage capacity (memory) and ubiquitous electronic communications technologies (24/7) will in all likelihood enable Radical Transparency to become the globally dominant knowledge model within the foreseeable future.

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[1] Frances Coombes, *Teach Yourself Self-Motivation*, McGraw-Hill, 2008

[2] John Dewey, *Theory of Valuation*, University of Chicago Press, 1939

The problem is the prospect of knowledge overload, the effects of which will bejust as pernicious, albeit very different, as was knowledge shortage. Whenever there is an abundance of some commodity replacing a former scarcity, the techniquesfor control, cooperation, coordination and communication (ie., management) must be completely re-thought and re-designed. The contribution of this book is part of that process.

Although many characteristics have been attributed to technology, for purposes of this presentation the most notable one is empowerment. Technology increases the options and choices available to people, and in doing so empowers them to plan more and accomplish more. Of all artifacts invented by humanity, the computer has the most potential for user empowerment. Computers, combined with telecommunications facilities, have had, and will continue to have the widest and the deepest impact of any machine in human history. The computer has has been called “the Universal Machine.”

This “computer and communications juggernaut” is both the driver behind and the rationale for Radical Transparency. It is an old adage that “Knowledge is Power.” The power of knowledge can be manifest as the power to control events, or the power to accomplish one’s own objectives (i.e., empowerment). Radical Transparency can provide both sources of power simultaneously. The more knowledge that is available, the more phenomena can be explained, predicted and controlled. The more that knowledge is used to explain, predict and control events to one’s own advantage, the more that person is empowered.

It is unlikely that all sources of knowledge will be uniformly subjected to Radical Transparency. BUT, the knowledge domains that will be conducted with Radical Transparency will increase progressively in the foreseeable future. As President Reagan once explained, “Information wants to be free!” Furthermore, more and more people want the same thing, namely free access to any and all information. Despite the reservations of Knowledge Elitists, more and more databases, repositories, and libraries are becoming both digitized and accessible. To the extent that this information can be Summarized and Generalized it can make an enormous contribution to public empowerment. This is where “how to present knowledge to the public” connects with “Radical Transparency” – summarization and generalization are primary techniques for the presentation of knowledge to the public.

There are probably as many particular purposes for using knowledge as there are users. However, these purposes may be slotted into a more general set of categories. It also needs to be kept in mind that for every positive purpose there is a corresponding negative purpose.

Based on what has been said so far, two of the most general and positive purposes for knowledge use, are Enlightenment and Empowerment. What are more specific examples of these two general purposes? Enlightening purposes of knowledge use include making things ***understandable*** and making events ***predictable***. Both of these will be considered beneficial. The detrimental opposites are making things ***mysterious*** and events ***unforeseeable***. Whenever attempts are made to mystify or obscure instead of clarify or reveal, the use of knowledge for such purposes is detrimental.

Empowering purposes of knowledge use include ***enabling actions*** and ***solving problems***. Both of these will also be considered beneficial. The detrimental opposites are ***inhibiting actions*** and ***perpetuating problems***. Whenever attempts are made to inhibit actions or perpetuate problems, the use of knowledge for such purposes is detrimental.

The burden of proof for the beneficial or detrimental use of knowledge rests with both the producers AND the consumers of knowledge. “Trust me” is not an acceptable response. Conditions for the creation and application of knowledge must be ***specified*** and ***verified***.

Nevertheless, the use of knowledge for detrimental purposes may be necessary for security reasons. So, the support for Radical Transparency must be pragmatic and NOT dogmatic. Where knowledge use is predominantly beneficial, open the books! When knowledge use is detrimental, such uses should be restricted to those uses that will prevent even more detrimental outcomes, AND there should be a wide consensus supporting this kind of arrangement.

There was a time when access to information was an opportunity (or an excuse) for "muck raking" and exposes. This is the transitional phase between a largely “closed” information policy and a relatively “open” information policy. After an extended period of openness however, the salaciousness of wrong-doing becomes quickly anti-climatic. The only kind of public behaviour that will sustain Radical Transparency is public demand for more information that will be used to enhance personal and social wellbeing. No other purpose will carry the weight that obvious, immediate and on-going benefits can provide. The acronym for this is WIIFM – What’s in it for me?! This is the purpose that will assure the future of beneficial knowledge use.

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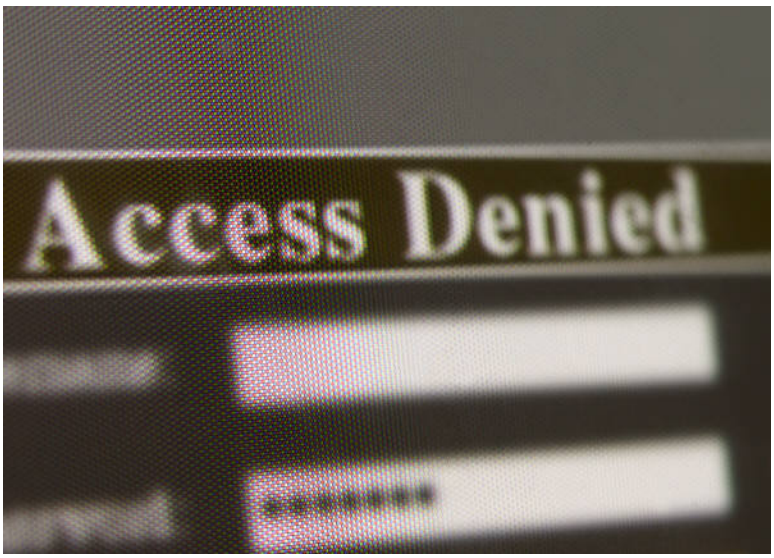


To

Knowledge Openness on a Global Scale

Flexibility can productively be applied to both the internal content and the external context of knowledge. Regarding the internal content, it is easy enough to "go off on a tangent" when making a case about almost anything. Marshall McLuhan covered this tendency in one of his "Four Effects" of innovation. What it amounts to, is that humans have a tendency to "go to extremes" when adopting some new idea or artifact. The "new thing" seems so useful that very soon it begins to be "over-used." The result is that all of the gains that were made with the initial moderate use are eventually offset by losses brought on by extreme use. McLuhan called this "the Reversal Effect."

A frequent instance of this Effect in Knowledge use has a similar phenomenology. All of the major categories of knowledge have three conceptual bases to choose from. In Epistemology (how we learn about knowledge) the three alternatives are Empiricism (find the facts), Rationalism (use good reasons), and Constructivism (invent new ideas). Although the most reliable approach would be a blend of all three, people often have a penchant to favour one at the expense of the other two. That leads to going to logical absurdities. Yet such extreme knowledge presumptions continue to appear on a regular basis. What we need is the good sense to develop and use a balanced approach, and THAT requires flexibility.

The context for knowledge use also favours flexibility. There are immediate effects, and long-term effects. It is foolish to ignore either, yet all too often knowledge uses are proposed which "pretend" that "here and now" or "eventually" is the more important consideration, and by implication the other is hardly worth much concern. There are also intended consequences and unintended consequences. Those who favour "intended" claim that if the original objectives are attained, that is what counts – "to make an omelette you have to break some eggs." Those who favour "unintended" contend that, since at least some effects are unforeseeable, we should settle for only those applications of knowledge that promise consequences with "virtual certainty" – which in practice means doing almost nothing new and different.

Once again, in the above cases, good sense is NOT prevailing. We should always try to anticipate the outcomes of knowledge application, but despite our best efforts we will sometimes be wrong. Therefore we should make new knowledge application initially tentative, or in technical terms, corrigible. Built into these applications should be a capability to track the effects, and make changes depending on the feedback from the larger context. Sometimes thing go well initially, only to reverse course later down the road. In a less than perfect world, the need for adjustments will always arise – we must be flexible enough to recognize unacceptable outcomes and/or consequences, and deal with them appropriately.

The unexpected DOES happen! As a result we must adjust accordingly.

In knowledge use this happens just as surely as with other types of action.

Catastrophyzing about these outcomes (“the sky is falling!” or “this will ruin everything!”) is not sensible or helpful.

We must learn to manage our own expectations by anticipating that some surprises will occur, so we must be prepared.

Knowledge Strategy

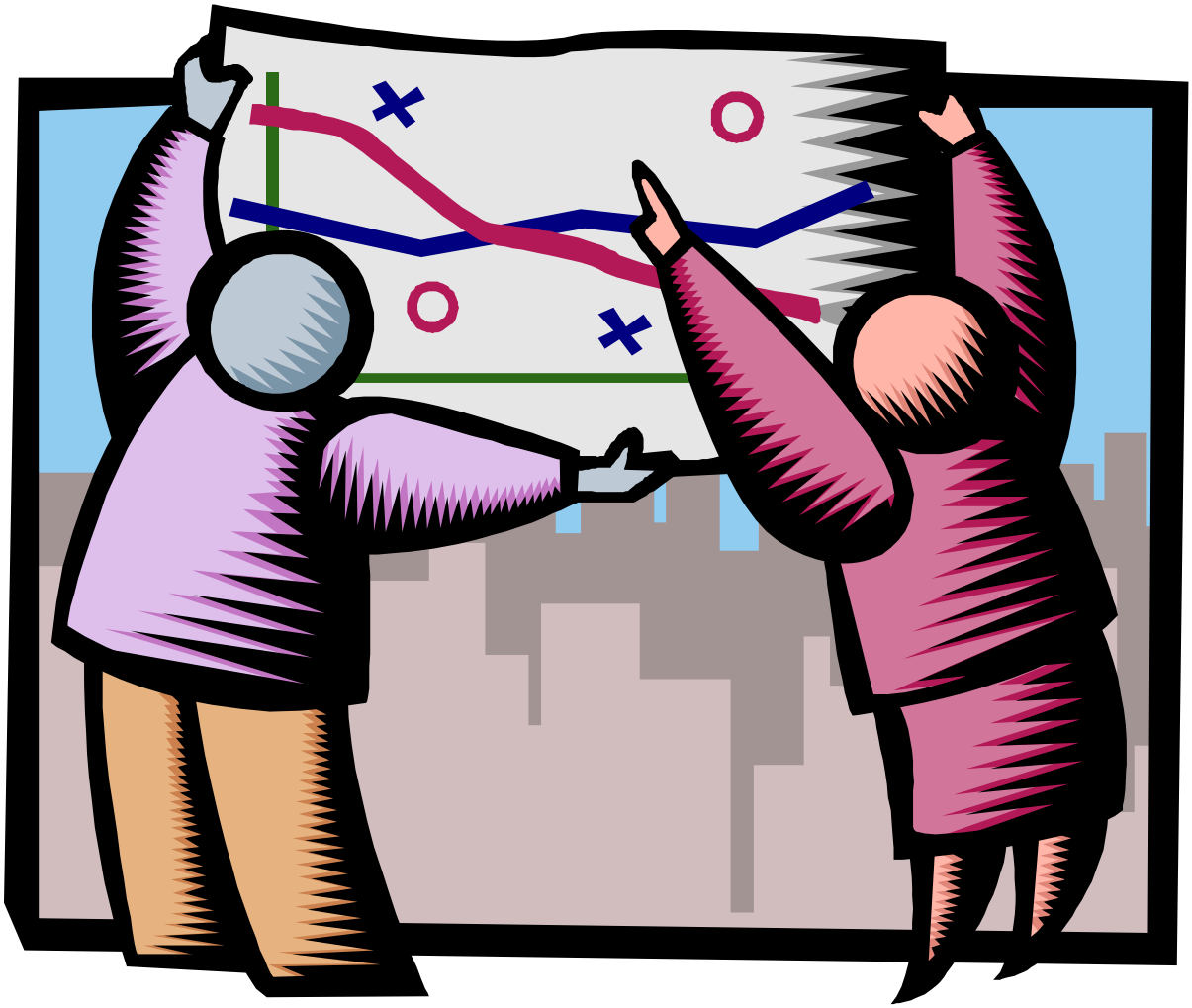
A strategy is a plan that outlines "where you are going" and "how to get there." Strategies that are resilient or robust have "some room to manoeuvre" (flexibility), but wise advice is to sacrifice tactical particulars to policy generalities when adjustments are necessary. What are the objectives of a strategy? In the wider sense, they are to anticipate and prepare for both the implications and the consequences of change within your chosen domain.

How does strategy affect knowledge development and application? One important way is through Herbert Simon's concept of "Chunking." The most useful way to conceive of, and deploy knowledge is within a systems perspective. The first lesson of this perspective is that knowledge can be organized in a "super-system – system – sub-system" fashion. Whichever level you are working at, there is a larger context around it, and finer details within it. Given this organization, it is always possible to generalize by shifting perspective to the next wider contextual level. Similarly, it is always possible to particularize by shifting perspective to the next narrower content level.

As Simon explained it, one can move up or down the Chunking scale, either generalizing or particularizing, depending on the purposes at hand. Another analyst elaborated on this capability by labelling the Chunking scale "the WIKID paradigm." According to this paradigm, the general chunking levels are Wisdom, Insight, Knowledge, Information, and Data. Going up the Chunking scale allows one to "see the bigger picture" about the context of symbolic representation. Going down the Chunking scale opens up "the tactics of implementation" so that one can give sufficient "attention to detail."

What is the larger context for knowledge itself? This larger context is referred to as Meta-Knowledge. An example would be Ontology, which concerns "what reality consists of." At the most fundamental level, what does "reality" mean? There are three concepts that cover the alternatives: (1) Idealism (reality consists of the ideas in people's minds); (2) Materialism (reality consists of the physical processes of the universe); and (3) Behaviourism (reality consists of what people have been conditioned to expect). Most people's "sense of reality" is composed of an amalgam of these three concepts. When someone's beliefs seem "unreal" it usually means their amalgam or emphasis is significantly different from your own!

Knowing all of this gives a person a wider perspective on what knowledge is, and how to use it. People with a different sense of reality than one's own, may see different possibilities and different explanations than we are familiar or comfortable with. Keeping this in mind gives one a strategic advantage in dealing with the diversity of people and expectations in this world.



One of the more recent “business fads” is the development and use of Strategy Mapping. Is it fair to call it a “fad?” To assess this, let us compare it with another “business idea” that also began with great promise, but has now been demoted to “just another business fad.” I refer, of course, to Knowledge Management. By the time Knowledge Management had gained respectability, I realized that I had spent my entire adult life preparing for the role of Knowledge Manager, and that I was therefore on the “wave of the future.”

But looking back on it all now, I recall that the publishers that began commissioning Knowledge Management books have subsequently discontinued them. Where I was once held in awe, I am now regarded with amusement! Although mapping out a strategy seems entirely reasonable, this will likely devolve into “required practice” in the foreseeable future, to be replaced by another “bright idea” on some new wrinkle in the Management Mindset. Ironically, the practice of Strategy Mapping and Knowledge Management will continue to fulfill important functions, regardless of their visibility.

When practicing Due Diligence, we "walk to walk" as well as "talk the talk!" That way we avoid "under-performance" based on an attitude of complacency. For instance, ***since most people behave similarly, what does it matter?*** This kind of attitude reveals its limitations however, when one's health, safety and/or life is at stake. We want the pilot of the plane we fly on to be reliable and a stickler for details. The same goes for the surgeon who is performing our heart surgery.

There are, in fact, many functional responsibilities surrounding us that do require attention to detail, constant monitoring, and careful performance. The electrical power supply, the integrity of communications, the food supply system, rail and air transportation systems, etc., all require due diligence for their effective operation.

As the role of knowledge becomes increasingly important to more and more jobs, it becomes just as important for Knowledge Workers to practice due diligence as it is for other essential service providers[1]. In many cases, knowledge now provides more value-added to the production process than any other component. Furthermore, the role the knowledge plays is crucial to the performance of the occupations in question.

It is therefore, entirely consistent to argue that the development of knowledge requires as much due diligence as its application. And just as obviously, the consequences of NOT practicing due diligence when developing knowledge, can have far more profound and far-reaching effects than most instances of application. Misinformation (misleading) or disinformation (lying) can corrupt multiple applications, as can ideological bias or foregone conclusions.

The rationale for Due Diligence in the knowledge process is to guard against bad intellectual habits and careless methodological practices. Either one can compromise the prospects for beneficial results, and increase the probability of detrimental outcomes. Therefore, the first line of defence is "No excuses!" Try your best, always, and when you make mistakes, own up and rectify. Thus, the second line of defence is "Re-do, and learn the lesson!"

All of the above leads to one inevitable conclusion. To maintain Due Diligence over a sustained period of time requires commitment on the part of the practitioner. The colloquial expression is "Real Commitment." One hundred years ago economist Thorstein Veblen called the same

[1] Atul Gawande, *The Checklist Manifesto: How to Get Things Right*, Metropolitan Books, 2009

thing "the sense of workmanship." So the problem is not new, but the challenge remains as critical as ever – we must be able to rely on the knowledge we need, and the people who use it.

Knowledge is the key to better performance, better productivity, and a better life. But the key to better knowledge is Due Diligence in the process requirements of developing it and using it.

The secret of sustained Due Diligence is, not surprisingly, personal motivation – ***"You gotta really wanna!"*** Amongst practicing Knowledge Producers, there is plenty of encouragement to ***"do the right thing"*** and ***"maintain professional standards."*** Rewards, in the form of enhanced status and financial remuneration, are often offered and accepted. But these will only go so far towards instilling the proper behaviour. Nor will forms of "policing" do more than the minimum – just as with other virtues and vices, it is impossible to "keep an eye on" everyone all of the time – nor is it desirable!

What is both desirable and possible is for individuals to "take it upon themselves" to embody the principles of good workmanship and perform accordingly. This kind of commitment often seems to others to border on compulsion – when a person takes extra time to double-check on project results for mistakes or oversights, the others involved may express annoyance. ***"Why are we wasting our time in this manner?"*** is the question often posed. The reply to this is, ***"Why is there never time (or money) to do things properly the first time, but always plenty of both to correct mistakes or rectify oversights after they have been revealed and criticized during a subsequent review?"***

If inadequacies have been pointed out, but someone else higher on the "chain of command" pulls rank and insists on moving forward despite your reservations, that person takes on the responsibility for the outcome – in the real world this often happens. Be sure to register your concerns, but you are relieved of accountability when someone else assumes responsibility.

Finally, preparation requires provisions for follow-up. Almost inevitably, not everything will go as planned. And even on the rare occasion when things do go as planned, there will be impacts and consequences that need to be tracked and reported on. Either way, the changes set in motion by knowledge development and/or application should be recorded so that lessons can be learned and undesirable outcomes can be mitigated.

Governments in modern societies seem to have a strange aversion to the follow-through process. They will hype their intentions, plans, and programs at the front end of their presentation and implementation. Once results start to roll in however, a profound loss of interest begins to set in. This isn't just an occasional occurrence, but the usual response. What is going on?!

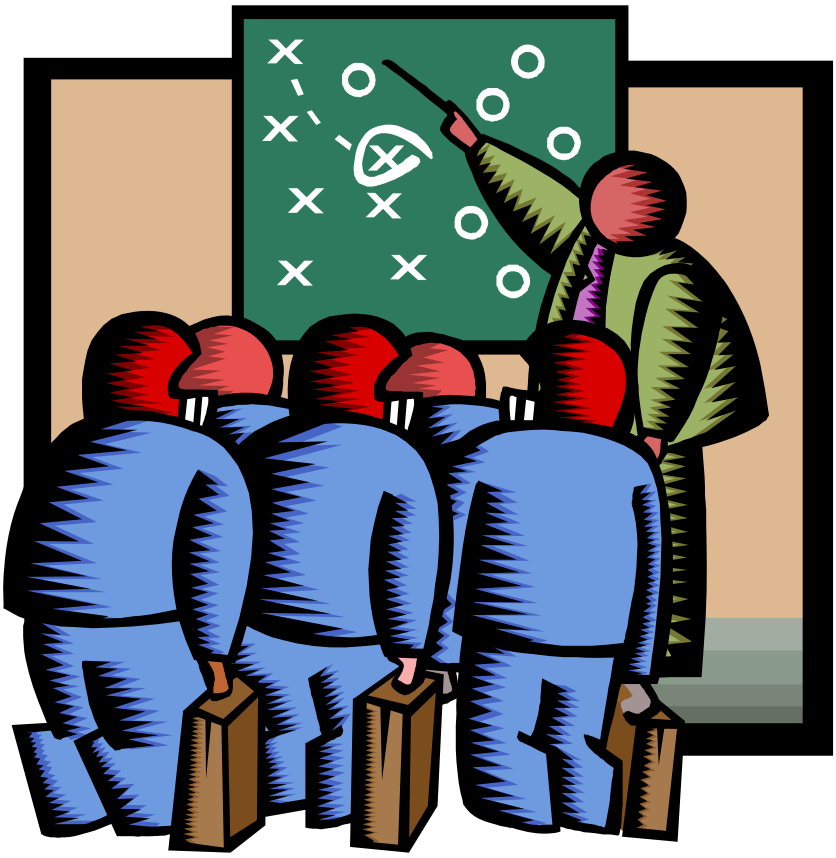
Those who observe this chain of events are often drawn to the a single hypothesis – despite the initial hype concerning what great things would be accomplished by the new programs, the outcomes were often disappointing, sometimes dismal. During in-house program evaluations, it usually turns out that a small number of inadequacies account for the bad performance: (1) poorly thought-out rationales for the programs in the first place – the assumptions made to justify proceeding with the programs were often just wishful thinking; (2) insufficient resources were allocated and/or expended on the programs – manpower, equipment, time, and access to facilities were all so limited that the programs were underfunded, almost as if failure was designed into them; (3) failure to assure cooperation and coordination between department and agencies on the inside, and participants and stakeholders on the outside – a kind of laissez-faire approach is taken, with the naive hope that somehow good intentions will steer the program on its way. Other related causes may also make their disabling contributions.

How do governments (and other organizations) get away with this sort of thing?! The answer is simple – too much secrecy. Since governments know they will likely be held accountable for whichever program inadequacies and failures "see the light of day," they contrive to keep as much out of the public light as possible. They are often aided and abetted by too much complacency on the part of the public. Yet when exposes occur, the public jumps on the bandwagon and expresses the usual excesses of outrage. Neither response is particularly helpful.

There are lessons in this for everyone. Watchdog roles should be independent of program development and deployment organizations. Public reporting should be as complete as possible. Program costs should be realistically estimated and properly funded. Prior research

should confirm the real need for a program, and the design most likely to succeed. All of these would be good parts of a follow-through agenda.

"Let's get together..."



Follow-through is far more likely to occur and succeed if "we are all reading from the same page" – in other words, if cooperation and coordination are part of the organization's culture. The coming of Radical Transparency will reward those who can and do work towards common objectives, and penalize those who don't. It would undoubtedly be a good idea to assess organizational behaviour immediately, and make provisions to strengthen good working habits and discourage bad working habits. Although all of this may take some time and effort, it is still a better alternative than getting caught in the unenviable situation of public scrutiny for wrong, foolish, petty or incompetent performance. By assuming the likelihood of follow-through henceforth, the organization can aspire to avoid acute embarrassment and sanctions, if only a stop-gap on the way to the better alternative of "doing the right things for the right reasons!"

A great deal of innovation and novelty is quite ephemeral – the "flash in the pan" and "one-day wonder" type of phenomena. There are two views about these happenings: (a) some regard them as fun, however transitory; (b) others regard such things are trivial, and utterly unworthy of serious consideration or comment. Both of these views are actually extremes, at the opposite ends of a spectrum. A more balanced approach would be that all new things need to be assessed on their own merits and demerits (both of which they will have).

Persistence is often portrayed as an unalloyed virtue, always "true and good." However, far too much of what persists is malevolent and detrimental rather than benevolent and beneficial. Historically, humanity has gone through many different versions of intolerance under different regimes and ideologies. In the more recent Modern Era however, greater degrees of tolerance have been advocated and partially achieved.

Tolerance has been a great innovation, hopefully more than just a "flash in the pan!" Nevertheless, it also has its down-side. Tolerance tends to encourage a loose sense of "anything goes" that accepts all behaviours, at least in theory. We have gone from the ideological extreme of pervasive intolerance, to the ideological extreme of excessive tolerance. But for tolerance to be a workable as a guide to behaviour, the standard must also recognize that some things, events and situations are intolerable. Hence, tolerating the tolerable is commendable, whereas tolerating the intolerable is short-sighted and ultimately destructive.

For knowledge and its effects to persist in a desirable way, both the product and its results must be beneficial and benevolent. This is the premise for promoting persistence as the value on which follow-through rests. Knowledge applications which appear manifestly good are easy to support. But as follow-through demonstrates, the appearance of good may just be superficial, or temporary, or an illusion, or the result of wishful thinking. Blasé acceptance of a benign scenario of good outcomes is often just an excuse for not wanting to delve into the real issues.

Knowledge Workers in particular, have a responsibility to situate their research, findings, and results within the wider context of real people whose actions, and inactions, have real consequences. The effort to knowingly pursue "things for the better" is a noble endeavour, but it is seldom straightforward or easy. We should certainly persist with these attempts, but always be willing to re-think, re-design and re-learn where feedback indicates that mistakes are being made or circumstances are declining for the worse rather than improving for the better.

Knowledge can unlock “the secrets of nature” and “the intricacies of human society.” That being said, possessing such knowledge carries certain responsibilities. In turn, responsibilities imply accountabilities. This is an issue that makes many Knowledge Workers very uncomfortable. By and large they operate on the assumption that research, discovery, analysis, interpretation, communication, and indeed some applications of knowledge can be performed in a “free and clear manner” with no obligation except to behave objectively and report accurately.

These are profoundly naive views. Just as every action has an equal and opposite reaction, every instance of knowledgeable empowerment entails an obligation to use that empowerment responsibly. AND, every responsibility implies accountability regarding the fulfillment or abrogation of that responsibility. As the Anglican Book of Prayer states, and as can be as readily applied to Knowledge Work, there are “sins of commission” (doing the wrong things) and “sins of omission" (not doing the right things).

When confronted with these concerns, Knowledge Workers fall back on “freedom of thought and speech” to suggest they should be free to do as they please provided they don’t break the law. But there is too much at stake to continue engaging in a “knowledge free-for-all.” So, yes, Knowledge Workers should persist, but in activities that both advance knowledge AND enhance humanity. These are conditions many other occupations abide by, and it is time Knowledge Workers caught up with the general tenor of the times!

When presenting the results of research to the public, the first step is to read the Research Report and analyze (deconstruct) its content. By way of analogy, David Macaulay has a book on architectural deconstruction called *UNBUILDING*.[1] The process of taking apart a skyscraper is illustrated in a series of "cut-away drawings." Such deconstruction is a way of discovering how the building was built in the first place.

Another term for the process is "Reverse Engineering." When some new gizmo is marketed by a particular firm, its rivals will buy the item and have their researchers take it apart to determine just exactly how its effects are produced. The hope is that even if the gizmo is patented, a variation on the mechanism that is NOT patented can be designed into the competitor's product, enabling them to get a share of the market for a product producing the desired effect. This ploy often works to one extent or another.

A similar process can be applied to knowledge, but with at least one major difference between the results expected and gizmo deconstruction – except for the particular arrangement of words (which can be copyrighted), concepts cannot be "owned" with a patent, copyright or trademark. Concepts are part of "the common heritage of humanity" and as such constitute a "social good" that everyone can use.

Hence, the goal of knowledge deconstruction is different from reverse engineering of patentable gizmos. Knowledge enables us to understand, predict and control phenomena to one extent or another. Although there is never "perfect understanding" (new discovering or new interpretations may increase, decrease or re-orient understanding), there can be improvements that enable wider, deeper or "richer" explanations.

The larger purpose of knowledge deconstruction is to identify the conceptual basics on which the research and findings are grounded. Although all knowledge has these presuppositions, practitioners are often not consciously aware of them – they simply "believe" and "value" in ways that guide their research, findings, interpretation and communication. This psychological condition makes such Knowledge Workers what Arthur Koestler call "sleep-walkers," which is what most of them are! Sleep-walkers can be "awaken" through Discourse Analysis (deconstruction of speech patterns), Concept Analysis (deconstruction of compound ideas), Synchronic Analysis (deconstruction of comparisons), and Diachronic Analysis (deconstruction of changes over time).

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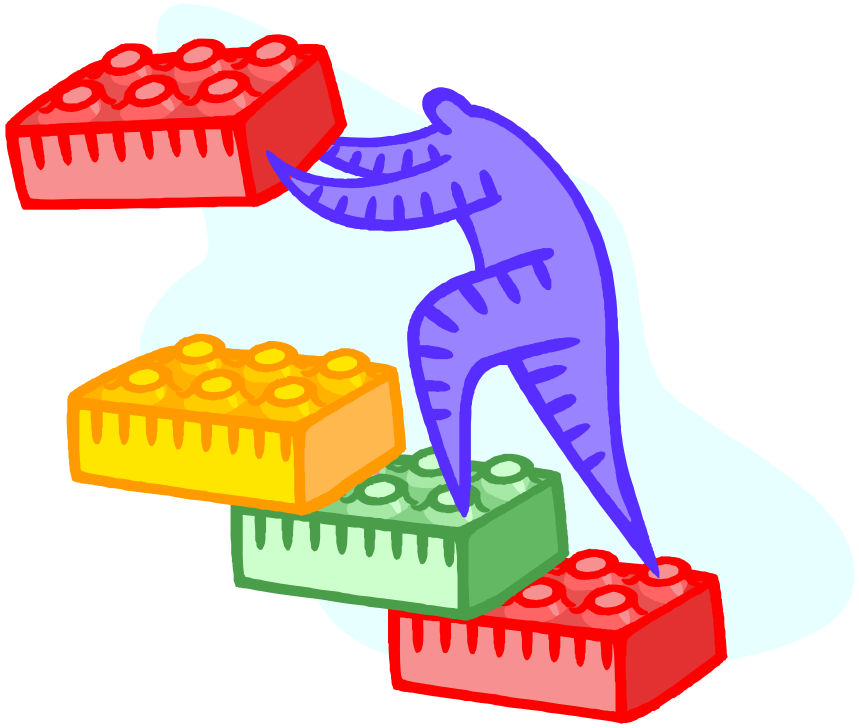
[1] David Macaulay, *Unbuilding*, Sandpiper, 1987

Each mode of deconstruction reveals a deeper conceptual reality that W. Edwards Deming called "Deep Knowledge." Within human culture there are core concepts that are the basis of human experience. These core concepts are delineated in The Human Knowledge MindMap, and are the tools of the deconstruction necessary before crafting effective knowledge presentation to the public. This is where "the rubber hits the road!"



The metaphor of "building knowledge" is often used. The term "architecture of ideas" is also frequently employed. This differs somewhat from the previous notion of "discovering," whether of data, information or knowledge. Data, information and knowledge are "created" from observations, analysis and synthesis, NOT found in nature or in our own minds. To adequately "build" knowledge, we must be able to deconstruct (reverse engineer) the knowledge we already encounter, identify its conceptual components, and then determine the feasible re-combinations that we can develop to explain, predict, control, and communicate. The following section outlines where that process begins.

The social psychology of conversation is the key to understanding how verbal or written accounts of new knowledge can be crafted to be interesting and persuasive.

Discourse is a fancy word for "dialogue." People talk to one another about everything imaginable, including the context and content of new knowledge. Why do people talk to each other, when do they talk to each other, how do they talk to each other? Do they focus on a single topic, or are they more wide-ranging in their conversations? Is there one meaning in what they say, or multiple meanings? How often are people telling the truth in what they say, and how often are they not telling the truth? How often are conversations about something "important" and how often are they just about something "trivial?" Discourse Analysis can study any or all of these questions, and try to determine how the patterns of conversation affect other types of action.

How do people talk, or expect to be talked to when they are considering the credibility and usefulness of new facts or theories from the findings of new research? This is a question science and technology communicators ask themselves when they are preparing a news release for the general public. Which audience will be most interested in these new developments, and what is the best way to present such material to this audience?

The easy way to answer this question is to guess. That is a mistake, a BIG mistake. Almost every attempt to guess the correct answer(s) to this question will be WRONG! Yet far too often even professional communicators would rather guess than concede that they have something else to learn. BUT, audience moods and preferences are so variable and changeable that only continuous cycles of surveying and re-surveying can keep one apprised of their current outlook.

Part of the problem appears to be that having to survey "ordinary people" to learn their changing or persistent outlook is considered beneath the dignity of many professionals, even communicators who are crafting messages for such an audience. So instead they "pretend" that they do accurately understand and can therefore engage the interest of these "ordinary people."

An acquaintance with Discourse Analysis[1] will set a communicator on the right path to appreciating and using popular social psychology as the basis for messages to the public. In the research which communicators report on, it is unacceptable to falsify findings, to pretend that something is known when it is not. Communicators should take this injunction seriously regarding their own work.

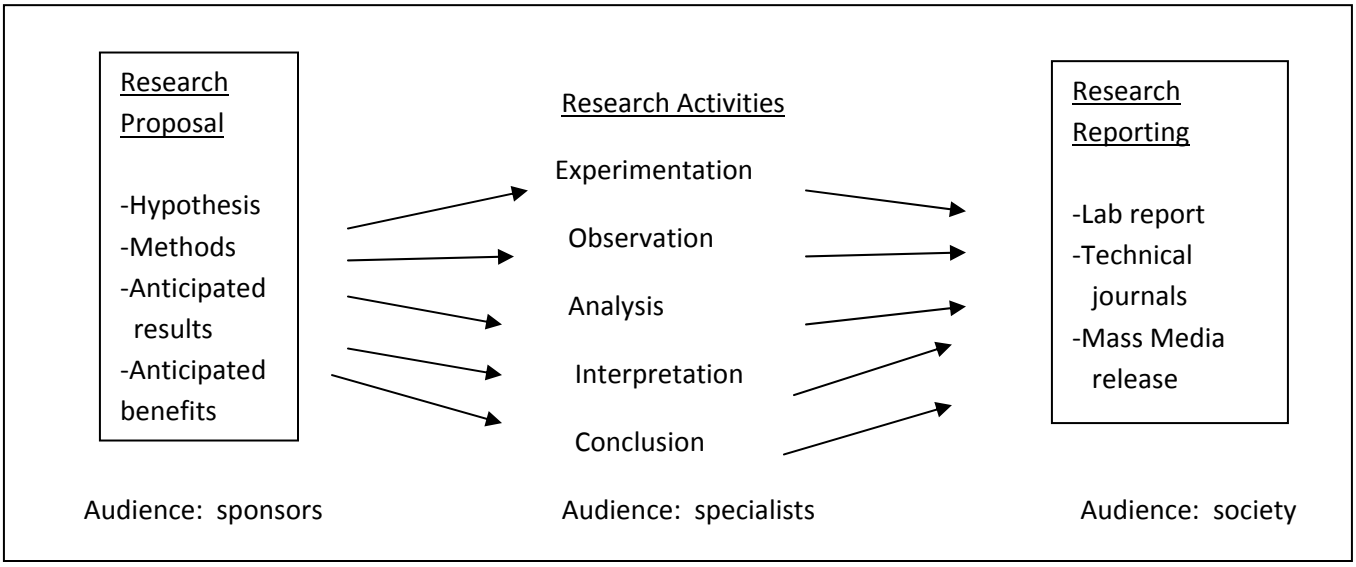
[1] N. Philips & C. Hardy, *Discourse Analysis: Investigating Processes of Social Construction*, Sage Publications, 2002

The general public is notorious for complaining (often bitterly) about many injustices and inadequacies, but almost never actually taking any actions to rectify the problems they complain about. When asked about why they are doing nothing (except complaining), members of the public will offer excuses (which they rationalize as "reasons"), but the bottom line is usually that "there's nothing much a person can do."

What can Discourse Analysis tell us about this situation? Let's consider the issue of the environmental impact of economic activity. Air pollution, resource depletion, over-population, global warming and waste disposal are all issues which get significant media attention. However, the way these issues are portrayed often leaves the public with very little idea as to what individuals can feasibly do that will make much of a difference. According to media hype, the biggest contemporary environmental concern is Climate Change. But changing to halogen light bulbs, hybrid automobiles, ethanol fuel and "green" products will only produce a marginal effect on Climate Change. Furthermore, most of those who engage in these activities concede the small impact they will have.

Something is wrong here, and perhaps it's not with the lack of public action, but rather with the lack of available alternatives. News coverage of risky developments that does not specify exactly what individuals can do that will alleviate or counter-act any anticipated harmful effects, is not only completely useless, but is actually counter-productive. The global media is full of catastrophizing coverage which offers no suggestions for effective action. The result of being inundated with this material is to create a sense of fatalism amongst many, if not most recipients of this "news." It looks like the goal is to use sensational stories to sell advertising, rather than to offer viable solutions!

The diagram below summarizes the Research Proposal/Activities/Reporting that produces new knowledge. The public prioritizes learning about the Proposal (purpose) and the Report (findings).



When specialists themselves report on their research activities, they often proceed to give long, running accounts of both the research process and the research results. No detail is too small or insignificant to merit mention in these accounts. To hear it being told, the experimental techniques are often ingenious, the observations meticulous, the analysis elaborate, the interpretation insightful, and the conclusions comprehensive. Although there may be no reason to dispute any of these claims, from the point of view of prospective public consumers of this new knowledge, the details of the Research Activities are irrelevant.

What the public wants to know and needs to know about this entire process is a Summarization and a Generalization of the Research Proposal and the Research Reporting. The Synopsis or Abstract of the Research Proposal will provide the context for the new knowledge – what is the goal of the research, why is the goal worthwhile, how will the research proceed, and how much will it cost in terms of dollars, research hours, and equipment and facilities. The Synopsis or Abstract of the Research Reporting will provide the content of the new knowledge – was the research goal achieved, what are the research results, what are the implications and likely consequences of the research findings, was the research cost-effective, and what if any further research is warranted. The bottom line is, what difference will the research findings make to the general public – diagnostics, cures, solutions, etc.?

This is the kind of Discourse Analysis that communicators need to engage in, to prepare them for crafting public media releases on research findings and new knowledge. The combination of Research Synopsis and Usable Results will empower readers to act rather than remain in a state of disabling fatalism.

The Mass Media are in "the Attention Economy." OK, so you have my attention, now what do you want to tell me? As Melanie Klein claims, what they seem to be selling is "Shock and Awe." That REALLY gets our attention. There is often follow-through on the part of the media regarding last week's "shock" and last month's "awe," but there is very little follow-through by the public on any of this. But then, how could the public follow-through, given the lack of solutions, alternatives or options available?

The available news releases on research findings usually present the new knowledge in a de-contextualized manner. The new findings or products just appear, like the weather, out of the blue.
Little or nothing is presented on where these new findings fit into any larger picture of challenges, problems or concerns. Media members and commentators respond by saying that most of the public doesn't care anyway. Perhaps not, but is that surprising given the way this type of news is presented. The media's model of their role appears to be a version of the "Nurnberg Funnel," a device for pouring new knowledge into the recipient's head in the minimum time, with the minimum of fuss!

Concepts are the basis of knowledge ability, and developing the capability to think conceptually[1] is the starting place for communicators who are tasked with translating research findings into the popular idiom.

In his book Sur/petition, creative thinker Edward de Bono contends that the primary focus of business R&D in the foreseeable future will shift from materials to concepts. In the context of the Knowledge Society this makes perfect sense – knowledge has become the single most important contributor to the value chain, so it is the input that has the most potential for innovation and productivity. This idea is not really that new. In the 19th century, Physicist Ludwig Boltzmann proclaimed that nothing was so practical as a really good theory. When this was said it was apparently to inspire practitioners and students of science. In the meantime both the quantity and quality of knowledge has grown to such an extent that managing knowledge is now one of our biggest challenges.

Examples can illustrate the process. Concepts are symbols that represent a variety of instances. "Chair "is a case in point. Amongst others there are easy chairs, lawn chairs, dining table chairs, exercise chairs, etc. The thing that all these instances share in common is their "chair-ness." This category can be made either more inclusive (chairs as one instance of furniture) or less inclusive (there may be a variety of types of lawn chairs, for instance those made of wood, plastic, metal, concrete, etc.)

A Thesaurus will give synonyms and antonyms for the terms listed. By looking at the synonyms and antonyms for a term, the term can be situated within its "family of concepts" (the larger category or categories to which the concept belongs). Reference books and encyclopedia will do the same thing, and give brief explanations of the context within which particular concepts and families of concepts are used to label phenomena and experiences.

If a person had an inventory of the basic concepts[2] of human experience, it would be possible to "decode" all of the varieties of new knowledge that were developed from research findings. That, in turn, would empower a writer to translate the technical terminology in research findings into the kind of messages that non-technical people could understand. The basis for such Concept Analysis is depicted on the next page.

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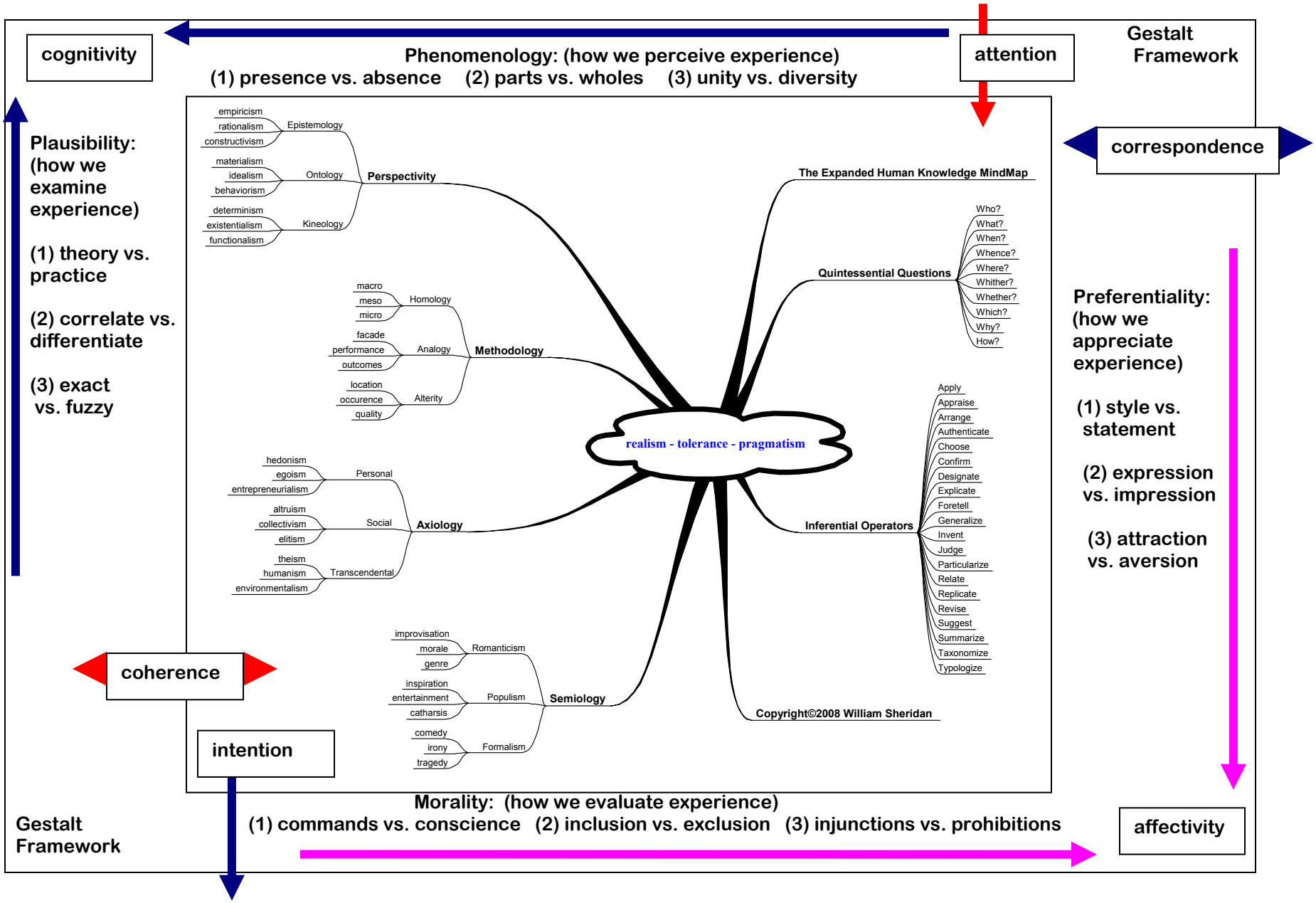
[1] John Wilson, *Thinking With Concepts*, Cambridge University Press, 1970

[2] William Sheridan, *How to Get Results in Knowledge Work*, Eloquent Books, 2010


cognitivity
Phenomenology: (how we perceive experience)
(1) presence vs. absence (2) parts vs. wholes (3) unity vs. diversity
attention
Gestalt Framework
correspondence
Plausibility: (how we examine experience)
(1) theory vs. practice
(2) correlate vs. differentiate
(3) exact vs. fuzzy
Preferentiality: (how we appreciate experience)
(1) style vs. statement
(2) expression vs. impression
(3) attraction vs. aversion
Perspectivity
Epistemology
empiricism
rationalism
constructivism
Ontology
materialism
idealism
behaviorism
Kineology
determinism
existentialism
functionalism
Methodology
Homology
macro
meso
micro
Analogy
facade
performance
outcomes
Alterity
location
occurence
quality
Axiology
Personal
hedonism
egoism
entrepreneurialism
Social
altruism
collectivism
elitism
Transcendental
theism
humanism
environmentalism
Semiology
Romanticism
improvisation
morale
genre
Populism
inspiration
entertainment
catharsis
Formalism
comedy
irony
tragedy
realism - tolerance - pragmatism
The Expanded Human Knowledge MindMap
Quintessential Questions
Who?
What?
When?
Whence?
Where?
Whither?
Whether?
Which?
Why?
How?
Inferential Operators
Apply
Appraise
Arrange
Authenticate
Choose
Confirm
Designate
Explicate
Foretell
Generalize
Invent
Judge
Particularize
Relate
Replicate
Revise
Suggest
Summarize
Taxonomize
Typologize
Copyright©2008 William Sheridan
coherence
intention
Morality: (how we evaluate experience)
(1) commands vs. conscience (2) inclusion vs. exclusion (3) injunctions vs. prohibitions
Gestalt Framework
affectivity

Concepts do not just appear randomly throughout a society, nor do they relate to each other in a haphazard way – they are structured in a manner that maps the contours of the culture and explains the spectrum of human experience.

The relevance to the public of new knowledge from research findings precisely concerns the contours of the culture and the spectrum of human experience. This is just the fancy way of saying that public concern with new knowledge, in either its individual mode or its collective mode, is some version or another of "what's in it for me?" (WIIFM) or "what's in it for us?" (WIIFU).[1] Some people are predominantly concerned with their own individual situation, while others are more focused on their group situations. Either way they are seeking to increase life's benefits and decrease life's detriments through (amongst other things) knowledge use.

How can knowledge do this? As defined herein, knowledge consists of concepts available to process information and guide action. The "processing of information" is the analytical aspect of knowledge use. The "guidance of action" is the synthetic aspect of knowledge use. For the moment we will focus on analysis. Given the foregoing, the "role of knowledge" is to situate experience within a framework that allows the variations in human behaviour to be explained and accounted for.

When either creating new knowledge from research findings, or translating new knowledge from technical terminology to popular idiom, certain basic issues are involved. What is the basis of what we know, and what are the implications of this for the development of new knowledge? Knowing and learning are based on concepts in the category of Epistemology, in which there are three alternatives: Empiricism (stick to the facts), Rationalism (look for credible reasons), and Constructivism (invent ideas as needed). Every piece of knowledge is some blend of all three, but decoding which predominates in research findings or knowledge reports helps account for whatever biases and oversights, strengths and weaknesses are present therein.

Another of the basic issues involved in doing research or presenting new knowledge, is the nature of reality itself. These concepts are in the category of Ontology, of which again there are three alternatives: Materialism (reality consists of physical things and processes), Idealism (reality is whatever people think it is), and Behaviourism (the sense of reality depends on how people are conditioned). Some research paradigms favour materialist approaches, whereas other prefer idealist

[1] H.B. Karp, *The Change Leader*, Jossey-Bass/Pfeiffer, 1996

or behaviourist methods. The entire research agenda will differ depending on which of these concepts predominates in the research proposal. Decoding which of these alternatives guided the research will greatly assist in evaluating the research findings and the knowledge reported from these projects.

Lastly, and of equal importance to the other two categories, is the question of what dynamics of change are assumed in the chosen reality. This is the category of Kineology, theories of change, and its three variants are Determinism (cause and effect), Existentialism (random variations), and Functionalism (guided change). Here too, the presumptions of various researchers will differ, and so will their explanations of how things change.

Everyone has an amalgam of Epistemology, Ontology and Kineology concepts guiding their research and reporting. Many do NOT explicitly and specifically recognize their own convictions in these areas. The analyst who does recognize the operation of these categories can decode research findings and knowledge reports in a far more comprehensive and in-depth manner. In these cases, what is not known can definitely hurt the credibility, implications and usability of the knowledge produced. In a Knowledge Society the structure of ideas is the basis of effective communication.

The only reliable way to discover which individuals or groups have similar or different characteristics or experiences, is to observe them simultaneously, record the diversity exhibited, and match the results for degrees of variation. *Studying people reveals whether they are the same or not.*

Synchronic means "at the same time," so it is an analysis of cases occurring within the same time-frame. All forms of social science use this method of study extensively. Cases which are similar in some ways are checked to see if they either co-vary or don't vary on some attribute of interest.

What's the point? The basic point is that it can't be assumed that people either are, or are not either the same or different based solely on impressions (uncontrolled observations) or intuitions (vague feelings). What initially appears like similarity may only be superficial – but, what initially appears as dissimilarity may just as likely only be superficial. If the motivation behind these "guesses" is merely idle curiosity, it may not matter, or be worth confirming or disconfirming. However, if individual well-being or social policy is at stake, guessing is a poor basis on which to proceed.

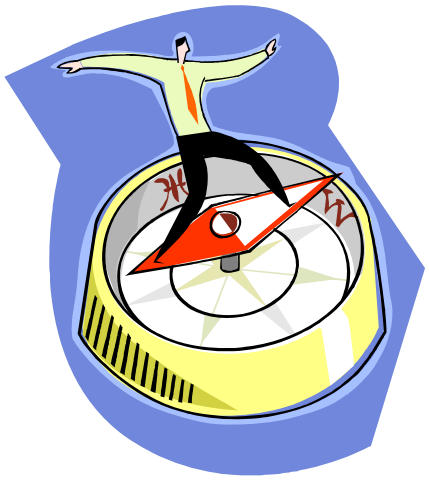
And yet, so much of what is recommended to both individuals and groups is based NOT on verifiable research findings, but rather on "guesses" or "hunches" or "preferences" or "prejudices." None of these is particularly trustworthy. To contribute to individual wellbeing or social betterment, reliable knowledge is needed about exactly what the needs really are, and which solutions will most likely work. And, the most effective way to employ knowledge gained through reliable methods is invite the understanding and participation of those who will be on the receiving end of the proposed changes.

The basis of the Enlightenment, which sparked the social movement of modernization, was the notion that society was amenable to "Social Engineering," to the application of scientific knowledge for the purpose of stimulating progress and improving humanity. On the way towards these goals we have passed through the Scientific Revolution, the Industrial Revolution, Economic Revolutions, Political Revolutions and the Urbanization Revolution. In these processes however, the "experts" have tried to replace the "clerisy" as the main source of social authority. Furthermore, it might have worked except for the most important revolution of all, the Democratic Revolution.

For the expert elite, the Democratic Revolution was the unexpected consequence of a situation they thought they could control. Albert Einstein was wise enough to realize that *"Experts should be on tap, not on top."* The majority heartily concurs with this conclusion. The best way to apply knowledge to the human situation is to form a partnership with those whose lives will be affected. The way to begin is communicate knowledge to the public and simultaneously dialogue with them about how to apply it.

The point about the above scenario is that it can happen, and in fact will happen if people experience the sense of empowerment that knowledge involves, because knowledge consists of concepts available to process information and guide action.

To what extent do individual communicators have to "buy in" to this agenda when presenting new knowledge to the public? That is the choice of each practitioner. On the one hand, communicators can do an entirely satisfactory job by simply presenting new knowledge so the majority of knowledge consumers can understand and use it. If this happens often enough, the attitude will begin to spread through the public that they can mobilize for meaningful, directed social change. THAT is the kind of empowering that knowledge can provide. Those who prefer to just "show and tell" will be able to do just that. Those who want to participate in doing more will be able to do that as well.



This arrangement is not perfect, but it does respect the democratic ethos better than any other alternative. So, Knowledge Democratization will likely lead to grass-root mobilization in support of change for the better. That change for the better can and will be both local and global, both immediate and long-term. It already happens to some extent now, on a sporadic basis. The difference for the future will be that both proposals for, and projects to make improvements will be increasingly better informed because of a better informed public.

Where will all this lead? No one can be precisely sure, but it will change many things. And it can all be linked back to Synchronic Analysis. When we study ourselves, and come to know our problems and our opportunities better, we are also likely to be able to anticipate what we can feasibly do to reduce detriments and increase benefits, in our own lives and in the society around us. We already do it to a limited extent, and there's much more we could do with the proper knowledge.

In my youth an acquaintance of mine sought to enlighten me with the following maxim: *Comparisons are odious!* When I later went on to "higher education" (college and university) I learned that Sociology, Economics, Psychology, Geography, Anthropology and even Industrial Design all relied on comparisons as vital inputs to their methods. What accounts for the discrepancy?

Comparing ourselves to others, or comparing various things to each other, reveals, upon reflection, that comparisons have both an "up-side" and a "down-side." Individualists are particularly fond of pointing out that comparisons can be a subtle (and sometimes not so subtle) way of perpetuating conformity. If we are constantly concerned about what other people do, what they think, and how they feel, it could very likely be based on the compulsion to "fit in." Some conformity is, of course, necessary to any form of social life, but democratic societies also encourage "freedom of thought" and "doing your own thing."

The problem is that many individualists tend to take "doing your own thing" to extremes. They often talk as if they have the right to do anything and everything that they please. This attitude is often justified under the rhetoric of "freedom of thought." Their implication is that there is not much of value that they can learn from anyone else, regardless of any problems they may have, or any lessons that others have learned. This is foolish chauvinism, at either the individual or group level. Through comparisons with others we can learn many helpful things. Whatever lessons are learned this way, must, of course, be evaluated as to their applicability to other circumstances, but we should ALWAYS be willing to learn whenever, and from whoever can provide useful information.

Most of modern social infrastructure and facilities only make sense because they are designed and operated for large groups of people. Transportation, telecommunication, education and entertainment provisions serve a mass market. The question remains however, what is the most appropriate way to design and operate these systems? Part of the answer to that question depends on using comparative data. There is market research to determine what users want and need, from their own point of view. There are also "cross-systemic" comparisons between local and distal circumstances, to see what others have leaned of value that will benefit us, without having to "re-invent the wheel all over again!"

So, we need on-going research of a comparative nature, on ourselves and others, regarding both continuity and change. AND we need to share the findings of that research amongst

ourselves, so that considerations of individual wellbeing and social policy can be discussed within a realistic context.

This does raise the interesting question about whether or not it is possible to compare "apples and oranges." In order for comparisons to be valid they must be premised in part on similarities between cases. The similarities are the dimensions that serve as "anchors" for the comparison, so that other differences can then be compared and contrasted. So yes, apples and oranges can be compared, as "fruits!" It is admittedly true that "apples" cannot be compared as "oranges" because they are NOT oranges. Similarly, "tables" cannot be compared as "stools," because they are not "stools" – but they can be compared as "furniture!"

These examples take us back to knowledge and thinking again. Comparisons and contrasts make sense because of the way we categorize the cases we are considering. We can always aggregate into a wider category, or disaggregate into a narrower category. It all depends on the analytical purposes we are pursuing.

The point of the above discussion is that the crucial thing to know is NOT every comparison ever conducted, but rather "how to do comparisons." If you can acquaint yourself with the findings from a comparison, and "de-code" the similarities and differences, THEN you are in a position to evaluate both the methods and the findings involved. Perhaps re-thinking some piece of comparative research would reveal more useful results. On the other hand, perhaps examination will reveal that the comparison was well done, and the findings very useful. Wouldn't it be nice to be able to do all this? That is what sharing knowledge is all about.

Changes over time, whether they are large or small, fast or slow, important or trivial, are one of the main characteristics of the modern age. Given the changes that have occurred over the previous 200 years, it is our own self-interest to track current trends of change so that we can prepare for their likely eventualities.

Two of the most important changes in modern times have been the increased consumption of energy and information. The majority of other changes are the direct and indirect result of these two major changes. Two of the current changes that are getting a lot of attention are Climate Change and the latest Demographic Transition (more and more people are living longer and longer). Both of these changes demonstrate why analysis of change is so important.

Most of the environmental scientists in the world agree that Climate Change is both a real phenomena AND of human origins. Some scientists from other fields do not concur. Where is the disagreement? Since one of the major requirements of science is to gather and analyze the facts, what are the "facts" regarding Climate Change? Ice at both the North and South Poles is now melting at a rate which is unprecedented in human history. Massive blocks are breaking off the South Pole ice sheet and drifting out to sea. Large areas of the North Pole ice cap are melting and reducing Polar Bear habitat in the process. Mountain glaciers world-wide are melting faster than ever previously recorded. So YES, Climate Change is occurring.

Having said all of this, the problem is the claim that human actions are the biggest contributor to Climate Change. An alternative estimate is that human activities account for only about 15% of the problem. Those making this estimate identify the major cause of Climate Change as solar flux. They maintain that geological evidence clearly indicates that fluctuations in solar radiation have been causing successions of warming and cooling cycles for at least a million years. The scientific consensus amongst environmentalists appears to spring from their concern to reduce humanity's ecological impact. Although this goal is certainly worthwhile, trying to accomplish it by the subterfuge of a "Climate Change scare" is very problematic. Proposed solutions are only credible when they are based on correct diagnoses of the problems. If the primary cause of Climate Change is natural rather than social, then what we should do consists primarily of much better Water and Land Management policies and practices, rather than "demonizing" green-house gases.

Now that "baby-boomers" (those born between 1946 and 1964) are beginning to retire, the proportion of older people to younger people has begun to shift in favour of the elderly. Regrettably, the majority of older people spend the last ten years of their lives in poor health and pain. Yet there is knowledge available that would prevent most of this poor health and pain, IF ONLY those who need it would access it and use it! Aging decrepitude is NOT inevitable, but it can only be offset with a better lifestyle, and that can only be achieved through knowledge use. So yes, analysis of trends in change is vitally important, and so is correctly diagnosing the causes and consequences of those trends. There is indeed much work to be done!

Let's be specific: How much and what kind of economic activity is sustainable on this planet? The results of the Agricultural Revolution and the Industrial Revolution have been to increase the carrying capacity of the planet over the past few millenniums by several orders of magnitude. Are there any limits to this "technological fix?"

The results of the Industrial Revolution and the Demographic Revolution have been to increase the housing capacity of the planet's urban areas over the past few centuries by several orders of magnitude. Are there any limits to this "sociological fix?"

The results of the Computer Revolution and the Communications Revolution have been to increase the storage capacity for the planet's information resources over the past few decades by several orders of magnitude. Are there any limits to our information processing or knowledge processing capabilities?
The results of the Genetic Revolution and the Nanotechnology Revolution have been to increase the possibilities of fundamentally altering the biological and behavioural characteristics of human beings beyond anything previously contemplated, over the next few decades. Are there any desirable limits to the extent that we should alter our own fundamental nature?

All of these trends are in the process of re-shaping our very identities as human beings. Yet these trends are being allowed to unfold in a haphazard way, with no particular sense of direction beyond random initiatives. When Thalidomide was initially used, the prospect of side-effects was ignored, with the result of deformed children until the drug was taken out of use. When Freon gas from old refrigerators was allowed to escape into the atmosphere, no thought was given to the possibility of ozone depletion, until that is, a hole appeared in the upper ozone shield and immediate banning was mandated.

We do not do a very effective job of anticipating the likely consequences of our actions. Then those actions come back to "bite us on the ass!" As the above trends show, ignoring after-effects is a more and more dangerous pattern of behaviour. We need to prepare to deal with these side effects.

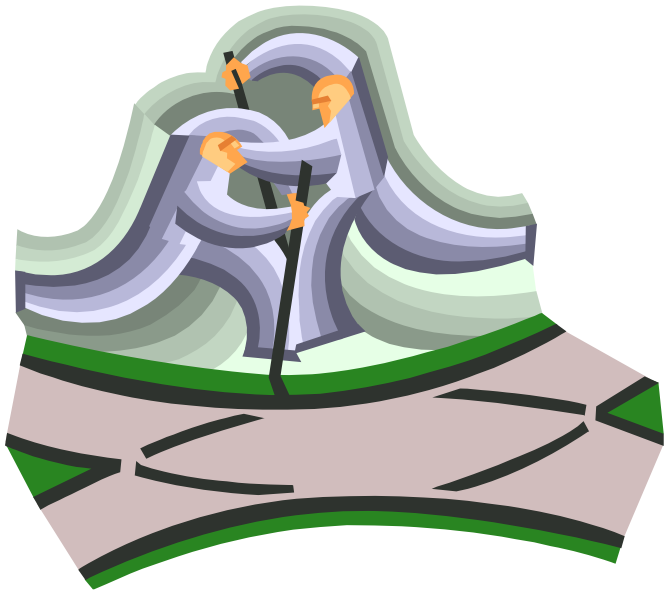
What do major changes and unanticipated consequences have to do with effective messaging? The answer is that these are not separate issues, but rather all aspects of a global issue, namely "the ecology of knowledge in the modern world."

Knowledge, its development, dissemination and application has multiple implications for us all. Knowledge creates both opportunities AND challenges. There are opportunities for progress and betterment. There are challenges of knowledge illiteracy, knowledge misapplication, stupidity (the refusal to learn) despite the availability of knowledge, chauvinism about the lack of knowledge (making a virtue of ignorance), and more.

When new elements or different rates of change are introduced into an ecosystem, the dynamics of that ecosystem change, often dramatically. When Dutch elm disease migrated to North America from Europe, it proceeded to devastate most of the elm trees on the continent. Asian Carp invaded the Mississippi watershed and then moved into the Great Lakes basin, threatening an ecological and economic disaster.

Introducing more knowledge into a social system starts a change process that can be profoundly transformative. Knowledge increases capabilities, to understand things and to do things. Since such knowledge is rarely distributed evenly, some acquire the capacity to change more, and in different ways than their peers. If that knowledge concerns how to develop and use energy and information resources, the potential is enormous. Prolong that process and you have the development of Capitalist Society. Prolong that arrangement and you have the development of profound inequalities of status and power, as different as night and day.

If into the same ecology of knowledge the idea of democracy is introduced, there also develops a growing inclination to offset or even reverse those inequalities. The result has been a dichotomy between the goals and the rhetoric of two alternative ideologies (proposals for what we should be doing).



Neither side of this contest has achieved satisfaction regarding which will dominate. What is the future of this dispute likely to be? Whatever twists and turns it takes, we will be living through it. Some have proposed an amalgam, a "peoples capitalism" that synthesizes the "will to power" with empathy and compassion. Maybe something like it will evolve, or perhaps a very different alternative. But the contribution of knowledge, in designing it, in implementing it, and in operating it will play the deciding role. We should be prepared for that challenge.

The summary lesson of Deconstruction is "Do your homework in terms of both context and content before attempting to construct public messages." Deconstruction requires that whatever source of data, information, knowledge, insight or wisdom one is working with, it must be disaggregated and analyzed to determine what concepts, assumptions, prejudices and preferences went into the production of that source. That way the hidden agenda behind the development of that source can be decoded so that "all is revealed" and "nothing is hidden" behind a smoke-screen of double-talk or exaggeration. It can be done!

Once all this background work is completed (practicing brings proficiently), the process of re-assembling the content for a public presentation can begin. The first step is to clarify what the objectives are for the knowledge presentation; this includes the audience, the various media that will carry the message, and the particulars of the presentation. Whatever purposes were behind the research, and whatever findings were in the report, should be clarified to avoid communicating misinformation or misunderstanding.[1]

Next comes conceptual synthesis, outlining the key concepts being used as the basis of the summarizations and generalizations that will be the theme of the message. These may be lifted directly from source material, if they can indeed fulfill the role of abstract and overview. Or conjoint terms may be created to express the conjunction of various elements. Such results often "emerge" intuitively as the material is being mulled over. Begin by just listing whatever comes to mind, and organize it later.

Graphic synthesis is the next task. Some sort of diagram that illustrates the concepts being presented should be drawn or found (perhaps from clipart sources). This is no particular type of graphic that is "appropriate" – within the graphic however there should be depicted an image that metaphorically alludes to a concept or concepts in the text. Test the choice by seeing if initial readers "get the connection(s)" between the writing and the illustration.

Lastly there is pattern synthesis, making sure that the entire message is consistent with the wider source(s) from which the original materials were derived. Does the message that has been prepared or proposed reflect the logic of the argument of the research and report that is being condensed? What are the key concepts of the research/report, and is that obvious from the reading? Refer to the other forms of synthesis to ensure completeness.

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[1] Michael Bremer, *Untechnical Writing*, The UnTechnical Press, 1999

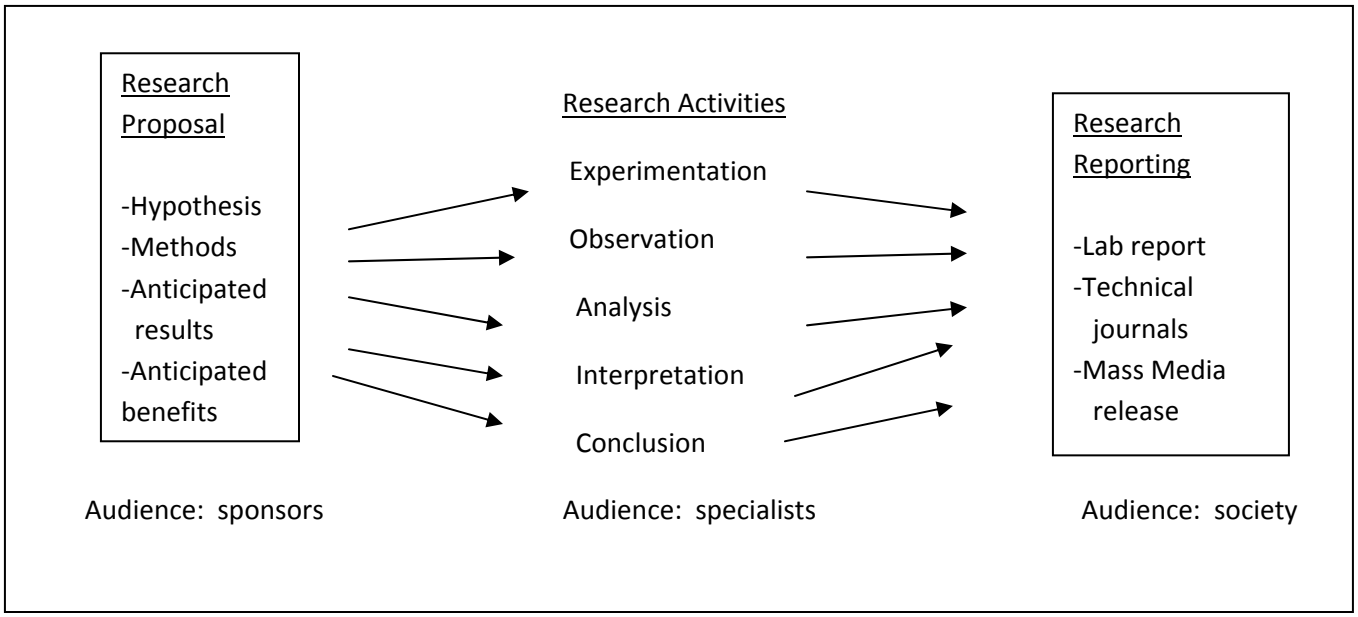
A large dose of good judgment must be brought to bear on these tasks. This will consist mainly of what not to do. Avoid too much enthusiasm, hype, and exaggeration, and completely exclude misstatement of the facts, using examples which do not relate to the issues being considered, and misrepresentation of the conclusions. The intended recipients of the message should come away with the sense that the beginning hypothesis and proposal piqued their interest, that the findings settled some questions, and that the generalizations explain what is relevant to the general public, and how it can be used or how it can lead to something useful.

Another term for Reconstruction that has come into recent use is "translation." In medical research, new findings are "translated" into procedures that can be applied either to conducting more research or to develop new cures.

The rationale for employing this metaphor (translation) is that those in a particular speciality may still benefit from acquaintance with findings from other specialities. BUT each speciality is in a kind of knowledge silo from within which it is quite difficult to understand other "foreign concepts." This type of translation replaces specialist concepts with more commonly used concepts.

When presenting research findings to the public, ALL specialties use concepts that are in a "foreign language." What the public needs is a reconstruction that consists of ONLY commonly used concepts.

The diagram below from the Content module is again useful to make points about objectives. The major conclusion of the Content module was that only the "Research Proposal" and "Research Reporting" sections were relevant for communication to the public. Now we can refine that even more.



How much of the Research Proposal or the Research Reporting should be communicated to the public? The answer(s) have both quantitative and qualitative aspects. Quantitatively, the public communication should NOT be too long (not be a "run-on message"). Experts and specialists have a (bad) tendency to go into excruciating details about each and every aspect of their efforts, not only about the methods of research but also about the nuances of their hypothesis and the interpretation of their results.

Just as most specialists and experts DO want to hear the details of these issues, the public DOESN'T want to hear these particulars. Many of these specialists and experts appear to live in a kind of "cultural bubble," somewhat like the "invisible shield" from the Colgate toothpaste advertisements. Nothing seems to deter them from going into a prolonged spiel that could fill anything from a book to a whole set of encyclopedia. If willing to listen, we will be told about the various uncertainties and disputes surrounding the proposal, why these are important, and why those with other views are obviously "not clued in" to the "real" issues.

Just which objectives should guide the translation process? Is it possible to spell out a set of general objectives that are both wide enough to cover the entire research panoply and narrow enough to specify which type of conceptual choices should be prioritized?

Researchers often justify their efforts by contending that they are adding to the social repository of knowledge. In this ideology there can never be too much knowledge. In candid one-on-one conversations and interviews, they will also concede that the prospect of rewards (income, recognition, status, etc.) can play a major role. The problem with these rationales that Amitai Etzioni pointed out years ago was that much of this accumulating knowledge provides little or no social benefit whatsoever (besides keeping the researchers employed). Why should this group be exempt from value-for-money accountability since there is no evidence that useless knowledge is a benefit?

Business sponsors of research usually do impose value-for-money accountability on the R&D that they support, but their "value" measure is strictly monetary (specifically profitability to the company). In the process of "returning value" they have polluted the environment, depleted resources, exaggerated the mal-distribution of wealth, and occasionally even jeopardized the very functioning of the wider economy. Research which produces these kinds of results also needs to have more social benefits factored into it.

Governments are tasked with protecting the public interest, but the political process tends to prioritize electability, and responding to various special interest groups. The "public interest" gets much rhetorical attention, but this is too often lip-service and little more. So the research stakeholders are specialists, businesses, governments, and the public. The only feasible basis for objectives in these circumstances would appear to be some combination of all four sets of interests. The "weak link" is the complacent public. The research community will only focus on public interests more explicitly when the public mobilizes to insist upon it. That brings us back to the agendas for either Radical Transparency or Good Workmanship.

Clarity is a metaphor for understanding – when things are "clear" we understand them, whereas when they are unclear (opaque) we don't understand them. It is often alleged that in modern times things have become more complex, and that this is a major cause of unclear situations. I will argue otherwise! When situations are complex there are far more details, and that in turn makes things unclear. However, when focusing on the details, things are always unclear, not just in modern times, but throughout human history.

It's not that things have become more complex in modern times, but rather that there is far more of a tendency to focus on details. The notion that "attention to detail" is a virtue is only occasionally true. More often than not, details obscure the big picture. We "don't see the forest for the trees," but the forest is where we must look for clarity. To use another metaphor, we have to "step back" from the details to see "the bigger picture." And to use yet another metaphor, "the devil is in the details" whereas the "larger truth" is in the "wider view."

Regarding concepts, the wider view comes from generalizing to a more inclusive category of ideas or experiences. In this wider view, the larger issues will be easy to identify, and this will provide clarity. From there the details can be sorted according to their contribution to, or inclusion within the larger principle. One of the wider principles guiding this effort is the notion that the messages that will eventually be developed will be focusing on the conceptual content of the research findings, not the details of the research methods. So, ignoring the details is precisely what THIS particular translation process is all about.

What is also likely to be needed is clarity between the concepts in the research findings. Are they all of equal importance? Not likely. Are they all independent concepts? Not likely either. So, the research findings will likely contain concepts with varying levels of importance, some of which will be simply elaborations of a wider category. When all these concepts have been identified and sorted, it is then necessary to clarify which of them will be given pride of place in the public presentation.

It should not be assumed that the concepts that the Research Reports prioritize, are the appropriate ones to prioritize in the Public Presentations. It may be that the primary motive for the research was to clarify a technical topic that has little or no interest to the public. On the other hand, some issue given minor mention in the Research Report could be of immense interest to the public. Just as the specialists are entitled to their own motive and reasons for research, so the public is entitled to its own motives and reasons for valuing the results. It is the public that the translators seek to serve, not the specialists that produced the knowledge.

However, when it comes to prioritizing what to mention and emphasize in public presentations, there is one additional priority that needs attention. Sometimes the narrow priorities of specialists, or the immediate priorities of the public may not provide enough guidance. There is also the question of the wider and longer-term consequences of knowledge availability. As was argued previously, Radical Transparency is the logical policy for a Knowledge Society. Nevertheless security concerns trump even transparency preferences.

Some of the research engaged in throughout the modern era provides capabilities that can radically alter and even endanger both specific minorities and overwhelming majorities. Biological research has not only produced cures, but also weaponized diseases and drugs. Mechanics has produced a wonderfully supportive infrastructure, but also a plethora of weapons of mass destruction. It seems that EVERY field of research could be, and often has been turned to either improving or destroying human security.

Governments should be held accountable for how they use weaponized systems. BUT the details of these weaponized systems should NOT be made available to the public. When and if research findings include, or focus on such possibilities, these aspects should be restricted. Also needing to be restricted are any research findings concerning particular individuals or vulnerabilities that could be targeted.

The Research Community has notoriously fudged on these issues. Those who don't participate in weaponization disclaim any responsibility for the application of their research findings. The only way to secure the information without repressing the researchers, is to strictly control the public release of that information. So, the translator must work as part of a security function as well as a communications function – the first priority is public safety and security, which means knowing what to communicate and what NOT to communicate. THAT is the bottom line in this job.

Concepts are symbols that generalize from particular cases to create a set of common elements or aspects. In the same way, concepts can be grouped into a set or "family" with common attributes or characteristics - that is called a category. As long as there is a basis for re-grouping of concepts, wider and wider categories can be aggregated which subsume concepts by way of more generalized dimensions: chairs > furniture > man-made artifacts > things > etc. Conversely, the categories of concepts can be disaggregated along successively more particular dimensions: things > man-made artifacts > furniture > chairs > etc.

Within a concept category (family) there usually are synonyms, some of which are more frequently used and therefore more familiar to the public than other members of the family. Translation from research findings to public messages consist of such processes as either using a more familiar generalized concept in place of a less familiar specialist concept, OR using a more familiar synonym in the family of concepts for a less familiar concept in the same family, or some of both.

When it comes to choosing "generalizations" or "synonyms" for the purpose of communicating with the public, it is quite possible, in fact more than likely, that the most appropriate choices for this type of messaging will not even specifically be used in the report of the research findings at all. Research reports usually use the technical concepts of the speciality in question because their intended audience is other specialists. It is the job of the "translator" to identify the core concepts so that other equivalent terms from the same conceptual family can be substituted that will more easily resonate with the public and at the same time retain the core concepts in the message. Dictionaries, Thesauri and Encyclopedia, hard copy or online, will be of invaluable assistance.

The afore-mentioned is one of the skills required for Conceptual Synthesis. Another important one is to combine concepts into a new conceptual entity that, together, means more than both considered separately. From Biology and Chemistry came Bio-chemistry, with issues and methods that transcend either, and in fact both precursors. Research in particular has produced numerous "conceptual marriages" of this kind that have spawned issues and answers that are far more than the sum of "the conceptual parts."

The entire Conceptual Synthesis challenge can be stated this way: after the Research Report(s) have been read, and the Deconstruction Analyses have been performed, the "translator"

[1] G. Fauconnier & M. Turner, *The Way We Think*, Basic Books, 2003

should have a sense of the major conceptual components of the research to be communicated to the public. Once that has been achieved, choices have got to be made about how to translate the original concepts into publicly familiar concepts.

Some of the concepts in the original material may indeed be used in the wider culture, in which case they can be put in the public message. If there are several meanings or senses in which such concepts are used, then a definition which limits the meaning(s) to those appropriate for this research should be given. When the concepts from the research are NOT familiar to the wider public, conceptual metaphors must be chosen that the public will understand, AND that will, at the same time, still give a good sense of the original meanings. Wow, that could be quite difficult. Well, no one said it would be easy! This job's mandate is to make it easy for the public, NOT to make it easy for oneself!

There is no "exactly correct" way to write text – since it is a form of communication, the important thing is whether the content of the message can be understood or not. So the best chances of success arise when the message is stated with clarity, and a sample of the recipients of the message give feedback about the extent of their understanding. Practice will certainly improve results.

The processes within Conceptual Synthesis often operate at the intuitive level within the minds of practitioners. As the Research Findings are read, and the task of translating them sets the context for the choices to be made, it often becomes apparent that however competent and interesting the Research may have been, the Report does not contain the specific concepts that can be effectively used with a public audience. Hence the need to either choose appropriate conceptual metaphors that do "speak to the public," or synthesize new compound concepts from available ones, or both.

As often as not (in fact, more often), the choices for these Conceptual Synthesizing tasks will be made intuitively rather than through any elaborate rational procedure. This process has both advantages and disadvantages. Trying to use an elaborate rational procedure would be very time-consuming, and be beyond most people's capabilities anyway. Therefore when a possibility "springs to mind" we are well advised to at least examine it for its potential to express the necessary meanings. If it works in this respect, or can be adjusted in some way to make it work, then use it. If not, then just as likely as not, something else will subsequently "occur to you." This is when those dictionaries, thesauri and encyclopedia may come in handy.

The down side of the "intuitive approach" is that when a solution is conceived of, the person involved can become overly attached to the result. It is, of course, all fine and well to be creative and come up with something "really neat" – but the crucial test of your new solution's viability is not your own preference for it, but rather its efficacy in communicating a message to the public. If it doesn't do that, it has to be discarded anyway.

Nevertheless, since intuition can be at least initially productive in the Conceptual Synthesis process, what can be done to encourage and enhance its performance? One notable scientist of the 19 century called such intuitive occurrences "lucky," but also suggested that "luck

favours the well-prepared mind." Since the way intuition works is that conscious learning eventually slips down into the subconscious, out of awareness but ready for access when needed, it therefore appears that the aforementioned piece of advice is exactly right. Learn as much as you can, in whatever way you can, and it will very likely come back to assist you intuitively.

Science journalist Steven Johnson has written a book describing this whole process, and it is well worth reading.[1]

While testing a draft of a prospective Public Presentation on an audience Focus Group, it would be a good idea to also hold a "Brain-Storming Session" with them. They may be able to either fine tune a Conceptual Synthesis that is presented to them, or even propose an entirely different conceptual emphasis that will communicate the message better than anything brought to them. It's important to remember that "Good ideas are wherever you find them!" No one has a monopoly on creative ideas, despite some contentions to the contrary. The translator's best role model is as "learner" rather than "expert" because public social psychology is "foreign" to most experts, and the public mood is always shifting anyway, in an attempt to make sense of changing circumstances.

[1] Steven Johnson, *Emergence: The Connected Lives of Ants, Brains, Cities and Software*, Scribner, 2008

...work out the clearest and most accurate way to present your data. Maybe you want to prepare a chart or graph... Think about the photos, videos, charts, graphs, sketches, or other "art" you can provide.[1] This quote comes from a book intended to provide scientists with a guide for talking to the public. It will therefore also serve for those who are communicating research results to the public on behalf of scientists (and other specialists).

The point the author is making in this passage is that many people learn far more effectively from graphics, or text and graphics, than from text alone. Recently psychologists have learned that there are a number of "different styles of learning and thinking." Some do text better, others prefer mathematics or graphics or music or kinesthetics (bodily movements). For the purposes of the presentation of research results, the combination of text and graphics appears to work best.

Translating text into graphics can be quite problematic. First, which mode is appropriate? Is a photo or picture better, or would a graph, diagram or chart be more effective? There is no definitive answer, except perhaps that some sources of messages will have a policy or a known preference for one mode rather than others. Messages from "official" organizations often use "formal" graphics such as diagrams or charts, rather than pictures or photos. On the other hand, those organizations or individuals trying to cultivate "the common touch" may prefer pictures or photos because they are regarded as more "reader friendly." It's best to always check to see if there is "standard usage" recommended (required).

Another "big issue" (really) is whether or not to use black and white or colour renderings. Colour costs more to produce, both at the creation end, and at the reproduction end. Publishers will often ask (or insist) that colour illustrations be replaced with black and white ones, in both articles and books. Some people in charge of Communications Policy view colour illustrations as "frivolous" or "campy." Recently however, there has been a gradual increase in colour use, but again it is best to check for any in-house regulations.

In terms of the "content" of graphics, a big issue is the implied "scale" and "accuracy" that an illustration suggests or implies. For instance, what is the best scale for time-periods – days, weeks, months, years, decades, etc.? Although the "data" in the research findings would seem to dictate the choice, diagrams are used to "summarize" such data – so what is the best scale of summarization? Data and conclusions together should indicate the choice. If the data is

[1] Cornelia Dean, *Am I Making Myself Clear?* Harvard University Press, 2009

reported in weeks or months, does graphical depiction in years and decades distort the findings? Answers to these types of questions do NOT appear anywhere in the data, but only in the judgment of the illustrator. It is also important to remember that when supplying material to the digital media, the photos and graphs should be submitted in high resolution Jpeg format, because this is what will make them most readily usable.

The point about using graphics is that the illustration(s) should help to tell the story being presented in the text. So the questions are, (1) what to illustrate in the story; and (2) how to illustrate the chosen aspect(s) of the story? Regarding ***what*** to illustrate, the obvious candidates would be (a) the research proposal: (b) the research activities; or (c) the research findings. The sponsors might prefer the proposal, the researchers might prefer the methods, and the public might prefer the findings. On that basis, the choice is obvious – a Public Information Officer is, after all, communicating with the ***public***.

As to ***how*** to illustrate, the choices would seem to be between the purpose of the research, the activities involved in the research, and the benefits of the research. And once again, the choice is obvious, since what the public primarily wants to know about are the benefits flowing from the research. The answers to both these questions will, not surprisingly, be “somewhat” of a disappointment to both sponsors and researchers. BUT that is precisely why the role of the Public Information Officer is being recommended – public money has been invested to produce results, and the public deserves a description of what its money has been spent on.

Graphical Organization[1]

Graphical presentation allows readers to "visualize" concepts as well as read about them. Drawing a diagram of a line, whether straight or curved, may convey information to many readers much better than explaining that the line is either "linear" or "non-linear." Diagramming will be even more effective if the intention is to describe relationships, between people, entities, or people and entities. A high proportion of human perception is based on directly observing, or using a metaphor of "seeing" to mean "understanding" the situation.

With the use of words (text), both semiotics (the study of symbols) and semantics (the study of definitions) enable a reader to check the context and history of usage – how different words are defined and used in different disciplines and situations. There is also a semiotics for graphical elements – how certain concepts and relationships are depicted. For instance, "increases" are depicted as going "up" whereas "decreases" are depicted as going "down" – this is a cultural convention, but it is widely understood and used. (On most of the occasions when these conventions are flouted, the results are not instances of "creativity" but of "bad design.")

Just as there is a "textual" literacy, there is also a "visual" literacy. Textual literacy consists of have a large vocabulary together with the ability to use it appropriately. Visual literacy similarly consists of knowing the various graphical depictions together with how and when to use them. If graphics are designed according to the principles of visual literacy, readers and viewers will be able to intuitively "de-code" the meanings conveyed by the graphics much more effectively than if these conventions are ignored or used in a haphazard manner (mixtures of correct and incorrect depictions). A survey of printed material will show that there is still very pervasive textual and visual illiteracy!

[1] Donis A. Dondis, *A Primer of Visual Literacy*, MIT Press, 1973

As well as being composed of standardized elements, the components of illustrations are also organized in recognizable ways. Relationships are often depicted by lines or arrows between the icons representing the things or people involved. The names of pictures, diagrams, tables of numbers, and charts are placed along the top or bottom of the graphic. Scales or dimensions usually are placed along the edges of diagrams, tables of numbers, or charts. Graphics that are not designed this way appear cluttered or unclear – so there is a "language of graphics" which should be used to maximize the likelihood of understanding.

In many cases the "standardized components" and "conventional organization" of illustrations are metaphorical representations of "naturally occurring" relationships and situations. In fact, most metaphors are based on visual and experiential perceptions.[2] Even in science (especially science!), much of the terminology consists of metaphorical representations of visual and kinesthetic images. When we understand we say we "see" and when we don't understand we say we "don't see!" Yet many of such relationships cannot actually be visualized anyway – they often refer to mathematical or systemic ensembles. Nevertheless, very few people take the "seeing" of understanding or the "not seeing" of not understanding literally – they intuitively know that the use of such metaphors does refer to the presence or absence of comprehension.

Graphic design courses are based on the semantics or semiotics of graphical illustrations, whether explicitly or implicitly. Although many illustrators are self-taught, what they all learn, from either courses or experience, or both, is that clarity of illustration requires that the modes of expression used must conform to cultural conventions, or communication will, and does fail.

[2] G. Lakoff & M. Johnson, *Metaphors We Live By*, 2nd ed., University of Chicago Press, 2003

Pattern Synthesis

Unless the Public Information Officer assembles the Objectives, the Concepts and the Graphics into an "acceptable, agreeable package," the message that is released may fail to connect with, and inspire the public despite the quality of the components. All of the elements of the message must "hang together," that is complement rather than contradict or ignore one another.

The above is a great statement of "ideals" but how does the Public Information Officer assure the effective implementation of these goals? This is where "the big picture" is needed, in spades! So how does one proceed in light of "the big picture?" Actually, the answer, or if you like, the method, is quite straightforward. A clue can be found in an aphorism by Winston Churchill. ***The farther back you can look, the farther forward you are likely to see.*** As covered in the previous section, this is a visual metaphor for "The more you can remember about where you are coming from, the more you will likely understand where you can go." This is also a metaphor, based on the saying "If you don't know where you are going, any road will get you there." Despite the metaphoric overlay, the salient points should be obvious!

These points were all fore-shadowed in the Preparation section. Is your purpose as a Public Information Officer always in the back of your mind?[1] Are you periodically strategizing and re-strategizing concerning the most effective presentation? Do you regularly exercise Due Diligence, particularly regarding your commitment to your intended audience? Have you persisted when results are slow or information is ambiguous? Have you deconstructed all of the inputs you will be using (discourse, concepts, comparisons, and changes over time) so as to understand the premises each contains? Because, as an earlier quote affirms, the better you can think, the better you can write.

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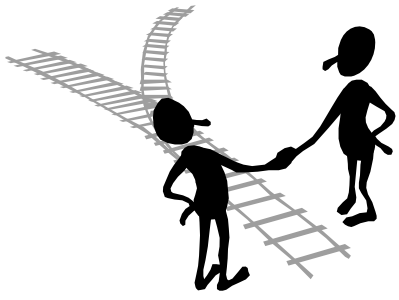
[1] M. B. Cherney & S. A. Tynan, *Communicoding: Learn to Talk the Way the Other Half Thinks*, Penguin Books, 1989

Just as Preparation is context, Deconstruction is content, and Reconstruction is intent. These are all in a "feedforward system" – "one thing leads to another." The goal methodologically, is to keep each succeeding section consistent with each preceding section. There should be no room in the forthcoming message for irrelevant or discrepant information – make up your mind, and state the case accordingly.

"What if the information on which the message is based is not that clear?" some will ask. Then what are you reporting? What is not clear – is it the data, or the analysis, or the interpretation, or what? The thing to remember is that "knowledge consists of concepts available to process information and guide action." If there is no guidance for action, then there is no new knowledge! Perhaps what can be reported on, is that the result of some research was the addition of more information regarding a question or hypothesis. This may be a valuable activity, but it is occurring all the time, and it is not new knowledge.

Perhaps the story could be that "the research team is persisting despite inconclusive information so far," of perhaps the ***real story*** is that the additional information is actually disconfirming previous findings, or previous conclusions! Either of these two alternatives would have action-guidance implications, albeit not necessarily those hoped for by the research team. Questioning the research agenda may be the really useful knowledge that research leads to, and shouldn't be overlooked.

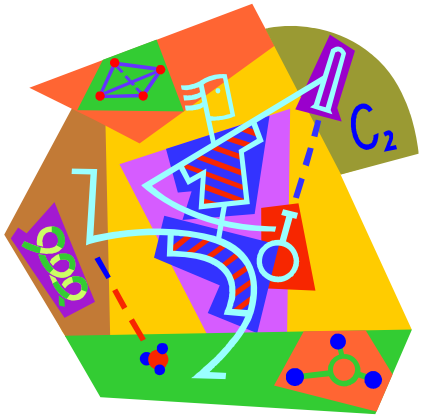
The essence of the "big picture" is that public investment is funding a great deal of the research conducted these days, and that the public is entitled to a return on that investment. As with every infrastructural support system in society, the users are interested in the results and the benefits, not the operation or the particulars of the support. Just as the researchers are seeking the facts, or the larger principles implied by the research, the public is seeking the findings and the benefits thereof. If researchers expect the public to "respect" their objectives, the public is equally entitled to expect researchers to "respect" their entirely different, but entirely worthy objectives. The role of democracy is to accommodate the diverse objectives of the various constituents. Only an equal partnership will serve both sets of interests.



By creating a pattern, it can be turned into a template that can be re-used in similar circumstances in the future. That is what "schemata" are used for. It is not necessary to completely "re-invent the wheel" every time another media release is developed – a repository of layouts, graphics, reference books and helpful contacts will always come in handy.

One advantage of this approach is that lessons can be learned and re-applied. There may be patterns in the teams that do research, the research methodologies, the research findings, the research reports, and/or the press releases of the research community. For instance, one pattern that occurs on a regular basis is the "recycling of hypotheses and findings" within disciplines. This "recycling" is often "disguised" by re-wording the proposal in terms of the latest technical vocabulary – the result is that it "sounds" new, but is actually just a superficial re-statement of an older concern.

Certain research teams also tend to "over-spend" their budgets, or "inordinately prolong" their experimentation – is it because the project is more of a "make-work" endeavour than a substantive inquiry? Or, is it because they are not getting results, or not the results that they had hoped for? Since public funded projects should ALL be accountable, these questions are just as legitimately asked here, as of any other similarly funded project.



Another pattern often observed is an "over-hyping" of research results. Researchers insist that it is the publicists who are guilty of this, not them. This is often correct, but the researchers are prone to exactly the opposite fault – they can rarely give a simple answer, a straight answer, or a useful answer. They rationalize that the data is complicated, the analysis is complicated, the interpretations are complicated, and the findings are complicated. Even if all of this was true, it is completely beside the point. Again we need to remind ourselves of Alfred North Whitehead's injunction about human ideation: *It is a mistake to suppose that, at the level of human*

intellect, the role of mental functioning is to add subtlety to the content of experience. The exact opposite is the case. Mentality is an agent of simplification...[1]

Members of the public and the mass media often bemoan the tendency for researchers to over-quality almost everything they say with regards to their methodology and results. They often seem buried in the details, and appear to be trying to create the same condition for others. That is certainly one interpretation, although there is another more interesting possibility – perhaps the attempt to emphasize details, and the complexity they lead to, is a deliberate ploy to accomplish two objectives.

The first objective is indeed a make-work project, and one encompassing the entire research community. If knowledge can be complexified, then the research, analysis, interpretation, conclusions and reporting of that knowledge can only be performed by, you guess it, specialists in these domains. Just as union members have argued that they alone are those "truly" qualified for the jobs they do, so researchers are arguing, in every activity they undertake, that they alone are qualified for their vocations. In this view, they interpret any and every attempt to "simplify and popularize" science as an assault on their "guild of expertise."

The second objective of complexification is to assure an expanding future for knowledge production. As the details and complexity of research findings grow, there is an implicit need to keep up with this progressive complexity by doing more and more research. Otherwise the complexification of existing knowledge will render it less explanatory tomorrow than today because complexity renders existing analyses, interpretations and conclusions of existing knowledge more uncertain and problematic. What is being postulated, metaphorically speaking, is a "research treadmill" that will never stop running.

All of this grandiose complixification is completely unnecessary. The various sciences have gone from the agenda to "describe phenomena" to an imperialistic agenda to (a) preserve their professional status, and (b) ensure expanded professional activity. THAT is the make-work project to end all make-work projects! Research is just another social investment. Many of their results these days do NOT appear to justify that investment. If the Research Community wants to continue its elevated status and employment prospects, it would do well for them to see the pattern in financing and evaluating "social goods." The public wants results from research findings that deliver benefits to them – adjust to that reality or face the prospect of declining support. THAT is the pattern which compels communicating research results to the public.

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[1] Alfred North Whitehead, *Adventures in Ideas*, The Free Press, 1933

After completing a draft version of a knowledge news release, a Public Information Officer's next task is to engage in a Wrap-up and Review. This is when the Preparation commitment to Due Diligence pays off. As well-crafted as any of the components of a knowledge news release may be, the entire "look and feel" must be acceptable, and the basic message must be communicated effectively to the intended audience(s). There are three additional processes/products that can now be tackled which will wrap-up the development of a knowledge news release AND review its conceptual content to assure that it conveys the message in the research findings on which it reports.

The first of the wrap-up tasks is Summarization. A summary of the research proposal, findings and prospective benefits should be provided for those whose initial acquaintance with the results of the research will be a brief encounter with a news announcement. IF the summary is crafted effectively it could generate sufficient interest in the viewers/readers/listeners to inspire them to pursue the story further by listening to/reading/viewing the full news release. Even if this follow-up does not happen immediately, or at all, at least the announcement recipients will not be totally ignorant of these particular developments in this field.

How does one go about writing an effective summary? In my high school English class this product was called a "precise." Our instructions were to scan the piece of writing for its "key concepts," compile them in a list, and compose sentences that knit the concepts together into a coherent whole that conveyed the core message of the piece in the fewest possible words. Although this might be expressed more elegantly or technically, it does summarize the summarization process rather well!

The second of the wrap-up tasks is that of Generalization. It is only very rarely (if at all) that the motive behind research is simply finding "just the facts." There are implications and consequences flowing from the facts that can be generalized into larger principles. These larger principles may range all the way from "laws of nature" to "regularities in human behaviour," with many gradations and combinations in between. The Enlightenment ideology of Science was precisely to discover and disseminate such principles so that humanity could assume control over its destiny.

What gradually became apparent as these principles accumulated, and research continued, was that the wise way to regard such principles was as ***tentative statements based on findings to date.*** New findings, based on further research, might very well show that a previous statement of principle was only partially correct, or only correct within certain contexts, or completely incorrect. Phlogiston was replaced by Thermodynamics; Phrenology was disproven and replaced by Brain Science; the 19th century hyper-competitive market model was modified by the 20th century socially managed market model, etc. As knowledge expands, previous generalizations are continuously re-assessed and often revised.

Next is the production of an Abstract of the research proposal and findings. The target audience for this piece is the research community. It is a technically informed summary that provides a short overview for other researchers. While composing the Abstract the original research and the draft news release can both be reviewed to verify that they do correctly present the proposal, findings and conclusions without any undue omissions or mis-statements.

The last part of the Wrap-up/Review process, is a review of the draft news release and the three wrap-up pieces to assure coherence between all of this material. Each piece should complement the others, yet retain its own distinct task, conceptually speaking. In policy this is referred to as harmonization between system elements.

The concept of “summarization” is based on a mathematical analogy. When “doing sums” you perform all of the mathematical operations indicated (addition, subtraction, multiplication, division, etc.) and calculate the final amount that results from those operations. Similarly, in summarization you integrate all the “why-fore’s” and “there-fore’s” and get down to “the bottom line.” If "doing sums" involves solving an equation, there is a rule of procedure that figures and operations within brackets are dealt with first.

The “rule” in summarization is that the order of operations described or implied in the text, is also the order in which the summarization should proceed – whatever core concepts are in the proposal, methodology, analysis and interpretation are summarized before the conclusion is summarized. This sequence is retained because some of the initial concepts may have a crucial bearing on the conclusions even if they are not referred to specifically in that final portion of the research report.

What about the people who don’t retain this sequence when summarizing? They will quite likely leave something important out, and if they realize that after completing some or all of the sections in the wrong order, then it will take considerable more time and effort to correct the mistake(s). Again we refer to the System Analyst’s favourite question: Why is there never enough time and resources to do things properly the first time, but always plenty of both to correct the mistakes afterward?

Those summarizing are also notorious for prioritizing their own preferred concepts, however minor they may be in terms of the research, and ignoring the major concepts in the research. An equally egregious habit of summarizers is to focus on an issue concerning the research team, or its location, or its source of funding, or something else irrelevant, rather than simply summarizing the research report per se.

So far we have glided over the process of "identifying core concepts." How is that actually done? The answer is that each language has a logic built into its grammar.[1] If you can read, speak, listen to and write the language, you have already learned the grammar at an intuitive level. Verbs (action words) and nouns (object words) are the most likely source of core concepts. As for the social psychology of public recipients of knowledge new releases, there is also advice available on how to "code" such messages.[2]

All of the foregoing are various aspects of the question "How does one 'frame' the Summary?" While keeping all of these aspects in mind, the key to successful "paraphrasing," "precises" or summaries is still the exercise of good judgment. The challenge with THIS piece of advice is that it cannot be reduced to a rule or algorithm. But there are good guidelines!

Deciding what to include, and what to exclude involves "tradeoffs." So does making most of the important decisions and choices in life. On the one hand there are the concerns and results of the Research Community, or the part thereof that produced the Research Report that currently needs summarization. On the other hand are the equally legitimate concerns and preferences of the wider public, specifically regarding whatever they will consider to be of "practical use." These tradeoffs are often treated as "quandries" for which prolonged agonizing is necessary. I don't think so! This is where "reasoning" comes in. Reasoning involves having explicit reasons for the decisions and choices you make. THAT is why all of the background of Preparation and Deconstruction is necessary – the processes involved help a person clarify the basis on which others have decided and chosen, and will also assist in making one's own decisions and choies.

Over the course of crafting a number of summaries, accidents and mistakes are going to occur, regardless of how mindfully and carefully a person proceeds. In this era of 24/7 media coverage, many live in dread of any perception of error. But it isn't the errors that usually cause the problems, it's the refusal to admit them and take corrective action. Just as important is the necessity to make certain that a spokesperson is available to deal with further queries, AND provide timely answers to those queries. So if a summary, or any other part of the knowledge news process is revealed as containing error(s), the proper response is not to "crouch in the corner," or deny any culpability, but rather to acknowledge the problem and take remedial action (issue a retraction, or a correction, or whatever else is appropriate to rectify any misinformation released, and answer further questions). THAT summarizes that!

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[1] D. Cogswell & P. Gordon, *Chomsky for Beginners*, Writers and Readers Publishing, 2007

[2] M.B. Cherney & S.A. Tynan, *Communicoding*, Penguin Books, 1989

Let's complete the discussion of summarization by finding or drawing parallels between the objectives and outcomes in the knowledge news release and the objectives and outcomes in this manual on operating as a Public Information Officer. Just as those who produce the Research Proposals, Activities and Findings are professionals, so are those who report to the public on those happenings. If we want to "walk the walk" as well as "talk the talk," so that this doesn't become one of those situations of "do as I say, not as I do," then one outcome is to minimize and rectify any disconnects between objectives and outcomes, whether they occur in the materials being worked with, or in the personal experience of working! Social Science tells us that many (most) human beings have quite an unrealistic outlook on life, based on holding wildly exaggerated expectations. This situation prompted a consultant to write a very useful book on how to cope in these circumstances.[1] Her single most important piece of advice is, ***the place to start managing expectations is with your own expectations!***

Some of the MOST exaggerated expectations are held by business consultants and business owners. They are under the erroneous impression that the way to get something done is to "issue orders." In the vast majority of cases the "orders" they issue consist of demands that certain outcomes be achieved "regardless." Although this can occasionally work, in most cases it does NOT. What is the problem?! The following are the problems: (1) most managers, no matter where they are located, have little or no idea about what behaviours are actually required to perform necessary tasks and produce acceptable outcomes.[2]

(2) The practice of issuing outcome-related orders focuses on the wrong targets for action – the outcomes are "lagging indicators," which means it is only possible to gage the extent of achievement AFTER actions have been taken and results tabulated. The ONLY way to assure successfully achieved lagging indicators is to specify and focus on "leading indicators," which means the kind of behaviours that are under our immediate control and that will produce the desired outcomes if done now. For instance, if you want money in your bank account at the end of the month, it does no good to say, hope, feel, or insist that "the money better be there!" That is the result you want, not the behaviour to engage in. The required behaviour consists of putting more money into the account than is taken out, enough in fact to achieve the dollar amount desired. This is, of course, "obvious" yet most orders are always focusing on future outcomes rather than immediate actions. But without the proper leading indicators the lag

[1] N. Karten, Managing Expectations: Working with People Who Want More, Better, Faster, Sooner, NOW!, Dorset House, 1994

[2] C. McChesney, S. Covey & J. Huling, *The 4 Disciplines of Execution*, The Free Press, New York, 2012

indicators will NOT be accomplished. So, why do business consultants and owners persist in issuing "outcome orders" when they usually don't work? Wildly exaggerated expectations!

Do Researchers and Publicists have equally exaggerated expectations? The answer is, by and large, yes. This writer has personally been "accused" of harbouring exaggerated expectations about the project of writing this current book! I have been asked if I "really" think that experts and specialists will ever agree to cooperate in making their findings accessible to the public. If I was expecting that kind of cooperation based purely on "a hope of good faith," then that would be a very exaggerated expectation. Recall however, that I am recommending that government sponsors make their continuing financial support of research contingent on Research Teams hiring and using Public Information Officers. The next question I am then asked is "do I really think that governments will agree to proclaim and enforce this kind of requirement on the Research Community?" And again, if I was "hoping for the best" from governments, I would indeed be delusional. Nevertheless, what I am recommending is that the public insist that governments make this commitment, and follow-through on it, by having the public make this a recurring election campaign theme. "But will the public stop being complacent, take this issue seriously, and mobilize to demand it?" is the last question in this series. However, recall from prior discussion that this focuses on another "lagging indicator" and not on the relevant "leading indicator!"

What members of the public should do now is to "talk this issue up" on EVERY possible occasion. And since media coverage continues to expand, and so does the demand for public affairs news, these two trends could indeed converge and eventually focus on demands for more and more transparency. If this were a new product, writing this book would be part of an attempt to "create a new market" for this innovation. Since this is actually a new public policy, this book is a part of an attempt to "create a new constituency" for this public good.

How can we summarize the lessons learned from all of this? (a) Don't expect too much from any of the "knowledge news release" stakeholders. (b) Don't expect the job tasks to be either too easy or too difficult. Public Information Officers fill a vital and likely expanding role in the interface between specialists and the public. In the wider context, Public Information Officers can help provide the kind of knowledge that will improve both individual and social wellbeing. This is a realistic expectation because it is already happening to a certain extent, and we have the wherewithal to increase these benefits, if we will make the effort to do so. The salient point is that this is a cooperative endeavour, so we all need to contribute to the eventual outcome. Each person should identify the leading indicators in their own circumstances that they can act on to increase knowledge benefits. For Public Information Officers this involves making knowledge as understandable as possible, for as many people as possible.

What general principles can we learn from the processes to produce, disseminate and utilize knowledge? How do these wider lessons impact the performances within knowledge production, knowledge dissemination, and knowledge utilization? In other words, have we learned, are we learning, or will we eventually learn to apply our knowledge about the dynamics of the Knowledge Society to the operations of the Knowledge Society? Will we "close the loop" between feedback and feedforward so that we become as mindful in our social endeavours as some have already become in their individual endeavours?

These are, of course, lagging indicator questions! We can only know what the outcome will be when we eventually find ourselves in that future state of affairs. But if we are committed to achieving those lagging indicators, then we must identify the leading indicators that can be acted upon now, AND we must actually act accordingly. That is the BIG GENERALIZATION from all of this. In the operations of the Knowledge Society those generalities that contribute to its daily functioning are less dramatic, but still a real challenge.

One of my mentors of many years ago advised me that when it comes to professional activity, most of the important pieces of wisdom consist of injunctions on what NOT to do:

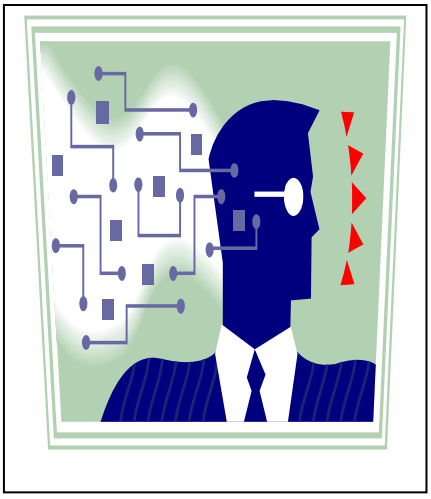
1. Don't get into the bad habit of over-generalizing, as regards both the content of knowledge and its wider applicability. In most situations it is rare to find either complete inclusivity or exclusivity in measures or indicators. Use such words as "all" or "none" or "always" or "never" with great caution – they often incline your readers, listeners and viewers to suspect that you are over-hyping your conclusions just for the psychological effect this will produce rather than because it reflects the actual distribution of instances. This can erode your credibility, which for a Public Information Officer is the single most important form of social capital.
2. Avoid using qualifiers that render your presentation ambiguous. Many regard this advice as a "contradiction in terms," but it need not be. Ambiguity arises from the belief that variation implies perpetual uncertainty. This leads to doubtful decisions, and/or confused choices, because consequences in the aggregate are unclear. But if uniformity is lacking, spell out the alternatives. When assessing possible interpretations, pose a variation of Bertrand Russell's key question – "What difference does it make?" Furthermore, explain how the logic of your reasoning leads to your conclusions. When contemplating the use of knowledge, prefer modifiable choices, based on the notion that the magnitude of risk should govern the extent of application.

3. Don't delay presentation, decision or choice based on the desire for virtual certainty. Neither be hasty to rush into something simply because you yearn for action. Another notable book previously read recommends that no important action should begin until adequate preparation is complete, but thereupon the best alternatives should be explored. The implications and consequences of knowledge application are becoming more momentous and their social and environmental impacts hold the potential for both great benefits and equally great detriments. Policy assessment, like technology assessment, needs to be much better developed and practiced.

4. Don't take "push-back" or criticism personally. This admittedly takes some time to master. My own monocle, which I often attach to the bottom of written pieces or public presentations, is "All feedback is welcomed, but I only use the good stuff!" And who, you may ask, decides what is "good stuff" and what is not? Well, of course, I do – but when questioned I point out that such decisions are made with my best judgment!

5. Read widely. This can be time-consuming, so I begin by going over just the Introduction and Conclusion of a book or long article, and seeing whether it merits further investigation. The entire substantive argument should be covered in the beginning and end, and should be sufficiently well explained to enable a decision as to whether more is needed. If this is not the case, that is reason enough to drop it! If it is well-explained, do you need more depth, or is a brief acquaintance good enough?

6. Think continuously. If you find thinking (analyzing, contemplating, synthesizing, etc.) a chore or an effort, being a Public Information Officer is probably NOT the occupation for you. Jobs in the "symbolic realm" are best suited to those who like to think. But even if you do enjoy thinking, its a good habit to practice it all the time, on every situation that grabs your attention – that way you will be readily able to deconstruct whatever content is in the material you are assigned. It really does help to be able to "get into the job" at a moment's notice.

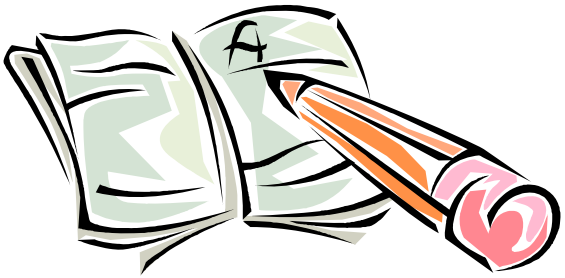


What lessons does acquiring experience at Summarization teach us about wrapping up and reviewing a knowledge news release assignment?

(a) Completely re-read the assigned and the developed material as the first step in the warp-up/review. You may have mis-read something initially, or mis-interpreted something subsequently, or simply overlooked something altogether. Such oversights may be minor, but when they are not it can make a crucial difference.

(b) Begin the wrap-up/review by focusing on whatever grabs your interest in the relevant material. Sociologist Max Weber pointed out that having a personal interest in the topic of research is a very powerful motivator. Work your way through the remaining material by seeing how it relates to your points of interest.

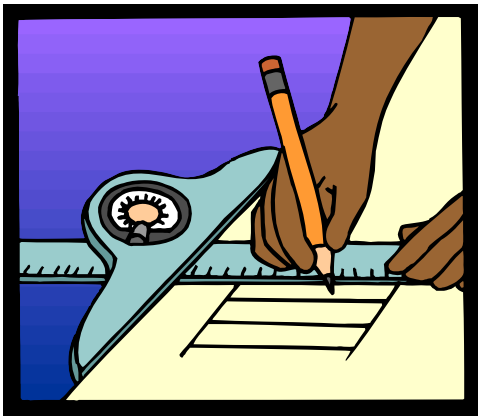
(c) Keep a notebook (or other suitable tool) with you at all times to record any "random thoughts" or "bright ideas" that may occur to you regarding your assignment. Sometimes flashes of insight can occur at almost any moment, as your sub-conscious mulls over the material and makes connections below the level of awareness.



(d) Check to make sure that every point you decide to put into the knowledge news release fits into the context of the research material being summarized. It is all too easy to "slip" something in that resonates with the Public Information Officer rather than reflects the content of the research.

(e) Use consistent wording and phrases throughout the Knowledge News Release to avoid confusing readers, listeners and viewers. Using synonyms may be technically correct, but the result can be to open up questions in the recipients' minds as to whether or not something new and different is being introduced.

(f) Keep fine-tuning the knowledge news release until you are satisfied with the results. Usually you will get a sense that it either "is" or it "isn't" good enough. You can't achieve perfection, but you can likely get it "good enough" to go with. Here too, bright ideas may also occur at any moment, so at some point you have to "declare it finished" and go on to something else.



An abstraction can be thought of as a short combination of summarization and generalization for technical specialists. It often appears at the beginning of technical books and journal articles. It is usually loaded with technical terminology because its intended audience consists of experts in the field from which the research originated.

The Abstraction process produces results that are "conceptual" or "theoretical," which is often thought to be of interest primarily to specialists. Those working in the same or similar fields often read the abstracts of books or articles in an attempt to keep up with the moving front of knowledge in their domains. They will generally only read further if the abstract persuades them that a full acquaintance with the Research Report will provide knowledge that is essential to their own endeavours.

Although experts are the intended audience of Abstractions, and as such, are very different from the main audience that a Public Information Officer writes for, it is still worthwhile for PIOs to also write them because it will demonstrate that the research findings and implications have been adequately understood as a background to communicating with the public. Just because the public wants to focus on the purpose and benefits of the research doesn't mean that they should be misinformed or misdirected. It is, after all, the role of the Public Information Officer to act as a mediator between specialists and the public. This means being able to speak "both languages," the technical and the vernacular.

What should a Public Information Officer be aware of, remember to include, and watch for in Abstractions? First and foremost, detailed descriptions are not necessary, no matter how

interesting or compelling the Research Report portrays them. The occasional exception may be methodological details IF they constitute major findings in their own right. Otherwise the focus of the Abstraction is on the logic of the argument and the implications of the findings.

Secondly, both the specialists who contributed to the research and those who follow it will read the Abstract to assure themselves that it does present the Research accurately and respectfully. If there are disputes in the field within which the research occurred, there may be disagreement about the Proposal or the Findings, and those in disagreement may follow the Findings, and the Abstract, and the news release just as closely as those in agreement. Both these groups will expect, in fact "demand" that the Abstract tell the straight story and nothing but the straight story.

The Abstract may very well hold the key to both the results of the research and the future of the research for two important groups of stakeholders. One such group is the Sponsors of the research. In addition to financing and policy specialists, this group will include those who are well acquainted with the purpose, agenda and history of findings involved in the research. Each and every Abstract is evaluated in terms of its contribution to the public investment in the research in question. The Abstract has to provide an answer, even if just implicitly, about whether or not the on-going research is worth further investment.

The other group of stakeholders is the rest of the Research Community within which the Research Team and the Research Results are situated. Besides the rhetorical "search for the truth," the stakes in the "research enterprise" are careers, recognition and social status, all of which are "positional goods" that are striven for in a very competitive "market." Advances up the promotional ladder, getting published and winning prizes, receiving the accolades of colleagues and public officials – all of these may be advanced or stalled by what an Abstract says (or doesn't say), and how it is received by peers. This is all serious business, and every serious researcher knows it! There is a lot riding on a well-crafted Abstract.

"Highlights" is an interesting concept. When hair is streaked with various dyes it is called "highlighting." When occasional passages of reading material are coloured with a marker pen, it is called "highlighting." In both cases the process is selective and the areas chosen are limited. So, highlighting is selective and limited. The same is certainly true for precise and paraphrased composition. Therefore the process depends on the basis of selection and the size limits chosen for the piece being developed.

Abstracting in particular is one field where "working forwards" from the proposal and hypothesis in the Research Report, will likely produce the most useful results. Just as Objectives are best suited to guide the Research, Reporting and News Release development, once all those stages are completed the challenge becomes to reflect on what has been accomplished and condense that into an Abstract.

As one works forward over the material, the focus of attention should definitely include anything that the Research Report emphasizes as worth noting. This may include the beginning hypothesis, the research methodology, the findings, or the conclusions, but not necessarily any one in particular – it depends upon what claims the Research Report makes.

Another focus of attention when working forwards is the substantive content of the issues featured in the Research Report. To be in a position to do this will require knowledge of the basic concepts in the knowledge domain in question.

The third focus of attention will obviously be the concerns which the general public has that relate to the knowledge area. Medicine and Biology, for instance, are likely of interest for their potential contribution to health promotion and ailment treatment. Electronics, on the other hand, are of interest to the public because of their potential to provide additional communication and entertainment services.

Since highlighting "works" for both specialists and novices, what it indicates is that information and knowledge overload are considerable problems for everyone. There is simply too much detailed information out there to absorb effectively. Furthermore, in most cases there is no compelling advantage to most new knowledge – the time and effort required to take it all in, is not worth it.

Keeping up with new knowledge is a real problem for anyone with more than a passing interest in the topic. One way to cope with the situation has been to develop newsletters which scan the topic of interest and give brief summaries of new developments. One technique some of these newsletters use is to subscribe to technical journals and condense the available articles.

One important question is, how will those with an interest in a topic, however elaborate or condensed the knowledge they receive, be able to successfully use it. The naive or "positivist" view is that "use" consists of applying the knowledge to get results in the "real world domain." This "concrete application" approach is no longer an adequate description of "use."[1]

When an individual or an audience receives new knowledge, there are four types of responses possible: (1) non-use; (2) conceptual use; (3) symbolic use; and (4) instrumental use. Non-use is equivalent to an attitude of "Who cares!" Most people (perhaps all) treat many types of knowledge this way – it is either of no interest or use whatsoever, or it would require more time, effort and/or money than what is available. So there is no engagement with the knowledge.

Conceptual use is the mental effort to understand the new knowledge – this use may be motivated by a general interest in the topic, or a specific interest in the details of a particular piece of knowledge. These efforts may be confined to the content of the knowledge alone, or may expand to take in larger portions of the knowledge context. Conceptual use appears to be the predominant use amongst users – they either just find the topic intrinsically interesting, or they "file the knowledge away" until some future opportunity arises to do something more with it.

Symbolic use is the decision to "politicize" the issue and help mobilize public support for some type of action. The individual contribution may be publicity, or organizing, or financial support. It requires more of a commitment than conceptual use. Instrumental use involves actually applying the knowledge in a "practical" way. This is the least frequent type of knowledge use, but it does have the greatest visible impact.

Abstracts can fulfill non-use, conceptual use, and symbolic use. Together these are by far the largest percentage of responses. Therefore, Abstracts can, and likely do contribute to actual knowledge use, even if in ways that may not have been considered "use" in the past.

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[1] Pimjai Sudsawad, *Knowledge Translation: Introduction to Models, Strategies and Measures*, SEDL, 2007

A Public Information Office is, in the words of one metaphor, a conduit from the specialists to the public for research findings. The crafting of the Knowledge News Release is expected to be "creative" in the sense that the "art of communication" is being practiced. However, the PIO doesn't propose, plan, or perform the research, just presents it to a variety of audiences after a technical report has been written. Therefore the responsibility of the PIO is NOT to "invent" the research content, but rather to "present" that content to different audiences. This has been said numerous times previously, but it can NEVER be said too often.

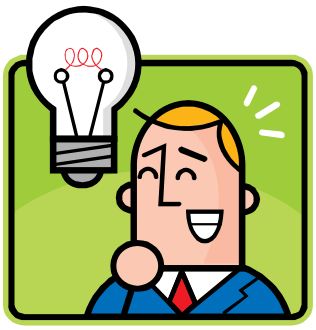
Nevertheless, the "creative art of communication" does require translation, from the wording and format in the Research Report to the wording and format more suitable to the intended audiences. Each product produced (the Abstract, and the Knowledge News Release) must be both internally coherent (no internal contradictions or irrelevancies) within each piece, AND systemically coherent (consistent conceptual construction). THAT is over-all coherence.

Is there an indicator by means of which one can guide composition and assure coherence? There is indeed – it is called Thematic Transposition." Themes are the conceptual framework employed to enable parallel thematic content even though the specific terminology and audiences may be different.

When writing about a particularly good concept for a certain task, it may be characterized as "a great idea" or "a hypothesis with a high probability of verification."

When proposing an effective methodology for conducting research, it may be described as "gets good results" or "demonstrates consistent prospects for observational acuity."

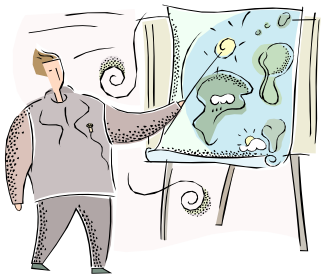
When employing a chosen deductive approach to analyze data, the rationale can be attributed to "the facts suggest" or "these variables can most effectively be disaggregated with this technique."

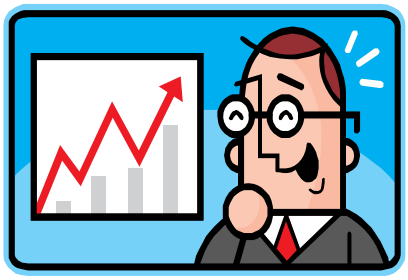


When considering the use of a possible interpretive alternative to explore logical implications, the choice could be justified as “a reasonable assumption” or “extrapolating along these dimensions offers the opportunity to explore important inferences."

When suggesting the most beneficial uses of research results, the impacts could be predicted as “further progress” or “continuing to contribute to value-added outcomes.”

When anticipating the long-term effects of selected applications of knowledge, the consequences might be suggested as “big changes” or “altering fundamental aspects of various social parameters.”





If, for any of the Knowledge News Releases being prepared, there are clearly more than two audiences with interests in the content, then more variations in the composition could be developed. As previously stated, since the logic is built into the grammar, a careful writing, editing, reviewing and fine-tuning should enable the Public Information Officer to compose variation based on audience interest and expertise, thereby preserving over-all coherence. The more technical term for over-all coherence is “logical consistency” of the argument in each piece. We will look at that next.

Logic standardizes the rules by which arguments can be made and inferences drawn.[1] Logic comes in two generic forms: Classical (traditional), and Pragmatic (modern). Classical Logic uses the conjunction of premises to determine entailment (or lack thereof). [If A equals B, and B equals C, then A equals C] The purpose is to specify strict validity. The basis of this approach is the correspondence principle (reality bites).

Pragmatic Logic uses the characteristics of classes to condition implication (or lack thereof). [Does bad behaviour imply bad character, or bad conditions, or bad luck, or what?] The purpose is to explicate prevailing relationships. The basis of this approach is set theory (comparisons and contrasts).

Just as specialists have complexified Knowledge, they have also complexified Logic. Elaborate premises and multiple comparisons have led to complex conclusions. Those who perpetuate these forms claim that this is the "natural direction of development." This is one of those "Naturalistic Fallacies" (others being "Natural Law" and "Natural Justice"). There is nothing "natural" about human culture – it is ALL contrivance! We can certainly contrive to complexify cognitive processes and products; however, we can also contrive to simplify them – it all depends upon our purposes.

Just as the implicit motive for Knowledge Complexification seems to be status protection and advancement of practitioners, so it has been with the practitioners of Logic Complexification. Rather than preventing novices from accessing Knowledge or Logic, these disciplines (and others as well) have been written in "code" that limits comprehension to those with elaborate expertise. The result is that Knowledge and Logic are just "Geek" for the vast majority.

As previously mentioned however, there is an implicit "logic" in each language, so that it is possible to use information to "describe", "explain", "clarify" and "simplify" in the messages we exchange with one another. The purpose in that communication strategy is to enhance the performance and prospects of the "human community" – notice that "communication" and "community" have the same root!

When the "purpose" of a particular style of communication is to exclude rather than include the human community, that style of communication is "anti-social" (obviously!).[2] Yet such "in-group" and "out-group" practices have been elaborately developed by various minorities. Given what humanity has been through, and the challenges ahead, it is now time for reconciliation.

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[1] A. Bullock, O. Stallybrass & S. Trombley, *The Fontana Dictionary of Modern Thought, 2nd ed.*, Fontana Press, 1988

[2] Alfred Adler, *What Life Could Mean to You*, Hazelden Foundation, 1998 (1931)

What therefore, is the "logic of the argument" for a Knowledge News Release? There is both a logic of the content, and a logic of the context. We have already covered the logic of the context above. The logic of the content depends, in part, on the specifics of the knowledge to be conveyed. It also depends, in part, on the receptivity of the audiences for that content.

With the advent of mass media news coverage, there has been a growing practice of hyping and then over-hyping announcements. In terms of knowledge, claims of "radical originality" and "momentous implications" are heard quite regularly. Since the extent and rate of social change are steadily increasing, new additions to knowledge are often accompanied by suggestions that entire theories and conceptual systems are being continuously re-invented.

All of this is vastly exaggerated. New facts, principles, theories and paradigms are built on existing findings. The key to understanding the "new material" is the older material on which the newer observations and concepts rest, much the same as newer buildings and roads are built on top of older buildings and roads.

Also, the way people absorb and incorporate new knowledge, is to "make it their own" by customizing an interpretation which fits into their already acquired cognitive framework. That is how they "make sense" of new ideas. Therefore in fashioning a Knowledge News Release, it is just as important to show links with previous findings as it is to emphasize new discoveries and departures. When we ask "what does it mean?" we are looking for the existing content that enables us to "situate" the "newer" within the "older." So, the two "framing questions" are: (1) Where does this come from? and (2) Where is this going?

The discussion of "the receptivity of the audiences for the content" is forthcoming in Part Two.

Overview

Effectively presenting information and knowledge to the public requires that the messages be designed to interest the majority of people rather than according to what will appeal to experts and specialists. Product designer Victor Papanek thought similarly, that far too many consumer products were designed by designers for other designers rather than for regular consumers.[1] Part Two of this book is based on the same type of premise, that Knowledge News Releases should be designed for "real people in the real world" and not just to satisfy a knowledge elite.

If "presenting knowledge to the public" is properly done, the messages will be readily accessible and easily understandable. However, to create these messages to the public will take definite skills and considerable practice. Be that as it may, the public on the receiving end of Knowledge News Releases doesn't need or usually want to be any more acquainted with the technicalities of "message composition" than with the technicalities of the research process. What follows in Part Two are the technicalities of effective message composition. There are three aspects of these technicalities: (1) Techniques (plain language, basic graphics, modular layout, and technique combination); (2) Components (the details of each of the different techniques); and (3) Application (ways to assure that the messages that have been designed do actually effectively communicate with the public).

Plain Language

Both Business Consultants and Psycho-Linguists agree that one very effective way to make messages comprehensible to large segments of the public is to use short words, short sentences, and short paragraphs, while at the same time employing good grammar. This approach has been termed "Plain Language" and is being used increasingly for composing public documents.

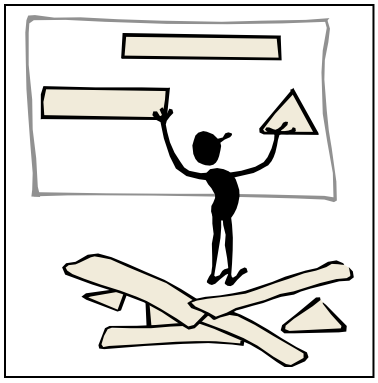
Basic Graphics

Pictures, charts, maps and diagrams that illustrate the concepts being presented by the written or spoken word, will really assist public audiences to absorb and understand the message being presented. And just as elaborate words, sentences and paragraphs should be avoided, so should complicated illustrations that would need an expert

[1] Victor Papanek, *Design for the Real World*, Academy Chicago Publishers, 1985

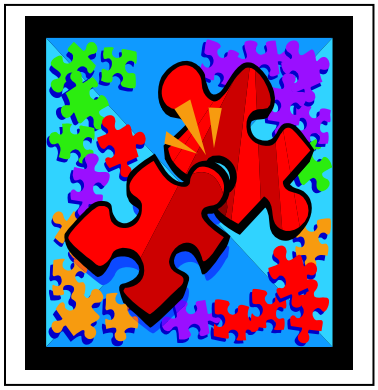
to describe and explain them. Keep it basic and simple.

Modular Layout



The textual components within the message should be limited to a few, and preferably one topic (theme). Furthermore the amount of the total text used should also be limited, to fit, along with any illustrations, onto one page, or two at the most (quantization). The sentence introducing a theme should be a strong statement of the essence of the theme. The illustrations should be relevant to and actually complement the concepts in the text.

Technique Combination



To effectively combine Plain Text, Basic Graphics and Modular Layout, it would be helpful, in fact mandatory to have a framework that relates the proposed content of the message to the context of the research from which the content derives, and the type of benefits the various recipient audiences are looking for. In addition a conceptual outline will assist the writer in keeping the composition focused and at the same time covering everything that needs to be in the message. In preparation to combine techniques, the terms and concepts from the topic area should also be defined and exemplified.

After the techniques have been combined and the message composed, the first stage of Application should be testing the presentation on a sample audience (focus group). Suggested steps could be the following:

- identify target audience
- fine-tune draft for that target audience
- analyze draft with plain language software[2]
- revise as software indicates
- test message on target audience focus groups
- revise again if needed
- re-test on focus groups
- release message when understandable to focus groups

[2] Deloitte Consulting, *Bullfighter*, http://www.fightthebull.com/bullfighter.asp (free download)

Since the public does not understand much of the terminology used by specialized professionals, a social movement has developed to encourage the use of plainer language when communicating with the public.

There has been widespread interest in promoting the use of Plain Language, particularly amongst governments and those in the service industries (insurance, health care, lawyers, etc.). Governments at the national, regional and municipal levels have passed laws and developed policies and regulations to review their documents and make them more readable to constituents. Insurance companies have re-written insurance policies so that the customers who use them can understand the terms of their coverage.

Voluntary organizations are also promoting Plain Language. Many of them, in many countries, have websites on the Internet to spread their message. They often sponsor conferences and workshops that plan research projects seeking to clarify the particulars of Plain Language, how to train practitioners to use it, and how to re-write documents that need it. Some journalists and reporters are also expressing interest in the idea.

Despite all of this activity however, there is surprisingly little in the way of substantive definition and guidance as to exactly what constitutes Plain Language. Most of the material available focuses on such topics as: (i) whether or not actual Plain Language standards can realistically be formulated; (ii) the complications of enforcing Plain Language standards, no matter what they are; (iii) the difficulties of providing manuals and training for any prospective Plain Language practitioners; and (iv) and the question of the desirability and feasibility of developing standards and practices across countries and languages.

Although each of the above four questions does deserve attention, they still do not deal with the matter of precisely what the application of Plain Language consists of – what exactly makes language “plain?” In my own widespread search through the available sources, ONLY two substantive sets of requirements have been offered.

This situation is doubly interesting because many of the research agendas on Plain Language emphasize the necessity of delineating the principles involved so that it will be clear as to just what is to be mandated, promoted, and practiced. Yet precious little in the way of such principles has been produced. So what we have is a widespread belief that plainer language is possible and would be helpful, but very little of a specific nature about how to do any of this. It looks like the two available suggestions are all we have to go on!

Fortunately the two suggested bases for Plain Language seem to make very good sense. One takes a quantitative approach, the other a qualitative approach. They are delineated below:

The Quantitative Version of Guidelines for Plain Language[1]		
1	Avoid using multi-syllabic words when words with equivalent meanings and fewer syllables are available.	Short words
2	Avoid lengthy (run-on) sentences of more than twenty words – break longer sentences into two or more shorter ones.	Short sentences
3	Avoid lengthy (run-on) paragraphs of more than six sentences – break longer paragraphs into two or more shorter ones.	Short paragraphs

The Qualitative Version of Guidelines for Plain Language[2]		
4	Express crucial actions as verbs.	Actions as verbs
5	Locate the participants of those actions in the subjects of the verbs.	Actors as subjects
6	Arrange information in those sentences so that older, more familiar content precedes newer, less familiar content.	Familiar before unfamiliar

The reason that both the quantitative and the qualitative guidelines to Plain Language seem to make good sense, is because the purpose of Plain Language is to facilitate better communication with the public. Widespread experience indicates that both of these sets of guidelines produce messages that are far more widely understood than messages containing more technical terminology and complex construction. The one thing that all of the various discussants on the Plain Language issues agree upon is that the only reliable test of Plain Language effectiveness is not theoretical argumentation but rather public acceptability. Both these sets of guidelines meet with public acceptance for precisely this reason.

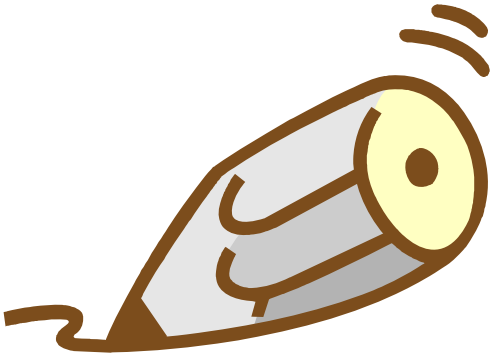
Neither of these sets of guidelines are "rules" – exact specifications to be enforced vigorously. They are, instead, aspects of grammar. Grammar produces a degree of uniformity in language, but the major role of language is communication, and effective communication relies on usage as much as grammar. If people consistently "violate some aspect of grammar" then grammarians will eventually catch up and change what counts as grammatical. These guidelines are consistent with such practices, and since they work, that is all that is needed.

[1] Deloitte Consulting, Bullfighter Software, http://www.fightthebull.com/bullfighter.asp
[2] J.M. Williams, "Plain English: The Remaining Problems," in *Plain Language*, ed. E.R. Steinberg, Wayne State University Press, Detroit, 1991

Short Words

Professionals and connoisseurs experience considerable gratification during the utilization of multisyllabic, sophisticated terminology. Most other people prefer short words. Need we say more?

vs.



Yes, we do indeed need to say more. In the Science of Semiotics, words are "signs." The role of signs is to "point to other things." Words are part of natural languages, and the role of natural languages is to represent other entities. The problem with multisyllabic words is their use fails to communicate with most people!

Besides conveying information (signing) however, people also use languages to make and share values and value judgments. Those who use bigger, more complicated words have a habit of moralizing that, in this case, bigger is better! The fact of the matter is that those who use multisyllabic terminology are not morally superior in any way. They are instead trying to show off, to play one-upmanship.

Specialists and experts therefore have mixed motives when communicating with the public. On the one hand they want to exchange information and knowledge, often on a contractual basis, i.e., advice for money. On the other hand they want to establish, maintain and proclaim their superior status as the purveyors of this information and knowledge, i.e., *we are better than you, and don't you forget it.*

Some specialists and experts have the "good grace" to make these points diplomatically; most however do not – they simply explicate and alienate. The yearning for prestige and status has existed across every society, in every era, between age groups, genders, ethnic groups and lifestyle practitioners. How is this now to be reconciled with the democratic ethos, where everyone has rights and is entitled to respect? The least offensive and therefore most acceptable resolution is to regard prestige and status as sub-categories of lifestyle. We certainly are not there yet however.

What can we do in the meantime, especially in regard to how specialists and experts communicate with the public? One avenue is to use mediators between specialists/experts and the general public, mediators who do employ diplomacy. As you have probably already guessed, the name for this group of mediators is Public Information Officers.

Even this will be a hard nut for some researchers to swallow. It therefore bears repeating that Alfred North Whitehead, one of the 20th century's most eminent philosophers, tackled this problem over eighty years ago.[1] *"It is a mistake to suppose that, at the level of human intellect, the role of mental functioning is to add subtlety to the content of experience. The exact opposite is the case. Mentality is an agent of simplification..."*

When researchers state or imply that their approach to communication is "professionally appropriate," they are actually just using a euphemism for claims of "social superiority." This is a hang-over from Medieval systems in which Aristocrats expect the deference of everyone "beneath" them. Although the "intellectual aristocracy" does not hold the power of life and death in modern societies, it still tries to impose its status preferences regarding its position in the occupational hierarchy – they want to be acknowledged as intellectual leaders and social benefactors.

So much for wishful thinking! The reality is distinctly different. Researchers, like all other social groups, have their conformists and their deviants, their successes and their failures, their leaders and their followers. Regardless of such in-group differences however, their common mandate is to research phenomena and report their findings. This mandate began with the Enlightenment, and has operated ever since. The changes which this mandate produced (science, technology, economic development and political egalitarianism) have led, in the latter half of the 20th century, to the "information age" and the "Knowledge Society."

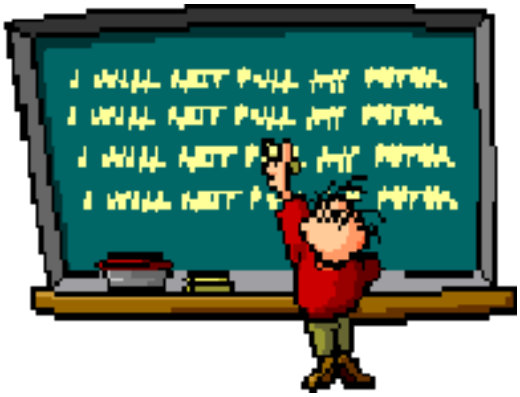
A Knowledge Society requires that knowledge be shared so that benefits can be realized. Hoarding knowledge is another hold-over from the Medieval past. It is no more necessary than that other hold-over, status discrimination.

In a democratic and knowledgeable society, the more that people can use knowledge to understand and improve their circumstances, the more social wellbeing will be enhanced. Sharing knowledge requires presenting it to the public. Presenting knowledge to the public requires a message format that the majority can absorb and utilize. THAT means communicating knowledge with the use of, amongst other things, short words, because this is the vocabulary most people use most of the time. What I would recommend is, no more excuses, no more delays, no more self-serving self-justifications. Let's take the rhetoric of rights and respect seriously, and stop using language as a tool for discrimination between knowledge producers and knowledge consumers.

[1] Alfred North Whitehead, Adventures in Ideas, Free Press, 1933

Short Sentences

Professionals and connoisseurs experience considerable gratification during the utilization of elongated, sophisticated sentences. Most other people prefer short sentences. Need we say more?



Yes we do indeed need to say more. The problem with elongated sentences is their concatenated logical entailment, i.e., they get complicated! Some notable modern logicians would amaze others by spinning out elaborate, run-on sentences that related and inter-related so many factors and considerations that almost no one could follow the argument. This was supposed to exemplify logical acumen – instead it demonstrated the absurdities to which even the most qualified specialists can go. Did these "wonder kids" never see the irony of using a medium whose function is to communicate, to both block communication and portray themselves as completely ridiculous? Apparently not! Can the rest of us learn anything from this example? Let's hope so!

Tests have been done with a wide range of readers. Sentences of various lengths were presented to them, and they were asked to rate the "ease of reading" of these sentences, and which ones the readers preferred. The samples of readers included everyone from those who were only moderately literate to those who were experienced and skilled readers. Almost everyone in these tests, regardless of their level of education, literacy and specialization, preferred to read shorter sentences. Since specialization is only in selected areas, even experts are "just ordinary readers" regarding topics outside their area of expertise.

When speakers or writers use long words and sentences throughout their communication endeavours, the impression it leaves with many recipients is that they are being "spoken down to," as when adults speak to children. Such practices are demeaning, and completely unnecessary – but to avoid such "talking down" would require that specialists "translate" their elaborate words and sentences into a form more familiar to most speakers and listeners, writers and readers. WOW, what a radical idea – actually trying to make your communications understandable! Many product designers have already accepted the need to make consumer products "user friendly," but the idea hasn't yet caught on with many speakers and writers.

What does "user friendly" mean, in terms of Knowledge News Releases? Recall the various senses of "use" of knowledge mentioned previously: (1) non-use; (2) conceptual use; (3) symbolic use; and (4) instrumental use. Regarding those who prefer **"non-use,"** the user friendly approach is NOT to condemn them. When knowledge is presented and the decision is made by certain recipients not to use it, that is their choice. They don't want or need a self-righteous reiteration of the knowledge in a moralizing tone explaining that "they are obliged to use this!" Freedom of thought involves the possibility that thinking may be right or wrong, and that choices may be wise or foolish.

Conceptual use may be the only "practical" alternative at the moment for many knowledge recipients. Knowledge use often requires that many other supporting circumstances be in place before action can be taken. Again, it's their choice. **Symbolic use** could very likely, and often does consist of not using knowledge as intended by its producers, but rather opposing such use(s). Symbolic use may consist of trying to mobilize public and/or political action to ban such uses. This can be just as legitimate a response as accepting and agreeing with the intended use of the knowledge. Knowledge producers should anticipate and prepare for this possibility.

Instrumental use will require more than just a Knowledge News Release, unless the use consists of some habit or lifestyle change (i.e., change in diet, or exercise, or work routine, etc.). So, the Knowledge News Release should always carry a pointer to more in-depth information for those who do want to follow up on it. And even the in-depth material can still be in short sentences!

Short Paragraphs

Professionals and connoisseurs experience considerable gratification during the utilization of prolonged, sophisticated paragraphs. Most other people prefer short paragraphs. Need we say more?

Yes we do indeed need to say more. The problem with prolonged paragraphs is their comprehension requires inordinately extended sequences of attention, i.e., you tend to lose track! Actually, specialists and experts often write the same way that they talk. When speaking about their work, it becomes a recitation of details that can go to incredible lengths. The speaker(s) seem to be able to navigate these details with relative ease, probably because they understand the relevance of each factoid. However, outsiders cannot understand the substance of these details (after all, they are not experts), so they all seem boring and incomprehensible.

It doesn't take either a psychologist or a sociologist to see the dynamics of this type of situation. On every occasion that it happens, the eyes of most of those present will glaze over. Expressions of incredulity will appear on their faces. "So what? Who cares? When will this be finished?" That will be the unspoken attitude of most of those subjected to "detail overload!" Yet the perpetrators rarely, if ever, clue into the effects their style of presentation produces. A quote from the Bible covers what is really happening – "None are so blind as they who will not see." If this is the case, the experts are just trying to "rub in" the fact that they "know what they are talking about," and that makes them superior to the rest of us in this "scientific age." The rest of us are presumably supposed to be grateful for what we receive.

As the book on scientific writing explained, writing (and undoubtedly speaking) follows directly from thinking. By reverse engineering their writing and speaking we can infer that Researchers think that what are important in their proposals, their hypotheses, their observations, their analysis, their interpretations, their conclusions, their report and their presentation are the details! Nor is any of this particularly surprising since most of their research agenda has a lot of "nose to the grindstone" kind of activity about it.

However, many people (perhaps most) find such detail work incredibly boring. In many respects, the metaphor that applies is "the knowledge assembly line!" Like working on an industrial assembly line, the effect can be numbing. One of the functions of "the division of labour" is to select recruits that are temperamentally suited to this kind of work. That is what "scientific apprenticeship" does – weeds out those not suited, and promotes those of are.

Meanwhile, back at the problem of "presenting knowledge to the public," the majority of the public doesn't want communication to resemble the "boring kind of grind" they often have to endure at work, but will avoid otherwise. It looks as if we are at an impasse here. The public only wants to know about the purposes and benefits of research. The researchers only want to discuss the benefits after presenting all of the details they think are relevant in any particular case. And so specialists write long paragraphs, with long sentences and long words, so they can describe the long processes involved in the knowledge production line.

The researchers, specialists, experts, professionals and connoisseurs have lost sight of the objective behind the entire endeavour. The same thing happens, and has been recognized, in many on-going projects. Over time the focus shifts from accomplishing the mandated goal, to turning the process itself into a goal. The purpose of the Enlightenment was social engineering, to change society for the better. The knowledge assembly line was invented to serve that purpose. What it has devolved into is "knowledge for the sake of knowledge," with or without application, and despite whatever detriments in addition to benefits that any application incurs. Practitioners rationalize the assembly line as a "noble pursuit," but most of them disclaim any responsibility or accountability for where it leads.

Shorter is better. There are not nearly so many distracting details, so we can get to the bottom line much quicker, and appraise its output and consequences. Much less to hide behind. Easier to recognize and deal with "the bullshit."[1] Knowledge production should not be a "make work" project – it should be a "make a better society" project. By focusing on the benefits, the public indicates that it already agrees with this larger mandate.

[1] Henry Frankfurt, On Bullshit, Princeton University Press, 2005

Good Grammar

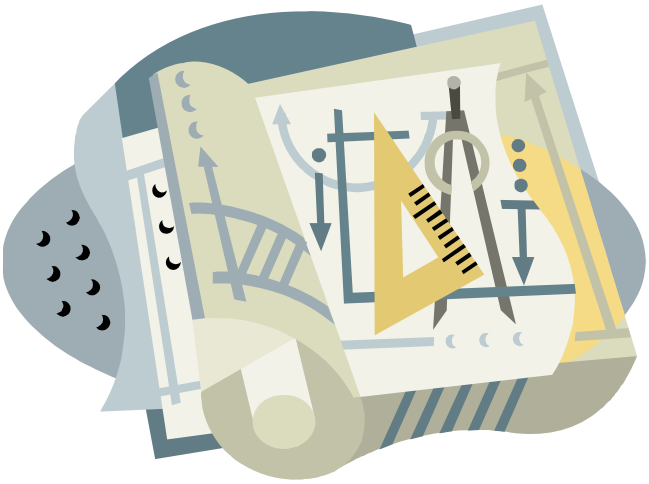
Since the logic of a language is built into its grammar, good grammar is necessary to compose meaningful messages that can be readily understood. Grammar is the arrangement of different types of words (nouns, verbs, adjectives, adverbs, etc.) so that the "semantic logic" of phrases and sentences is assured. What is "good grammar?" It is a correct arrangement of semantic logic with elegance and economy!

Given the above definition, it is questionable whether elongated words, sentences or paragraphs can really qualify as "good grammar." Insofar as these extravagant grammatical elements can, and do, distract from the goal of producing "readily understandable messages," their use begins to slide into "bad grammar" very quickly. So, why go there?! It is, in all likelihood (and dare I say it), vanity on the part of speakers and writers. When communicating with the rest of us, let's tell these specialists types to "stop showing off!"

This is an on-going dispute between grammarians and linguists about how languages operate. Formal grammars are actually modern inventions, occurring with the application of rationalism to language – the attempt is being made to turn grammar into an algorithm (rigid rules and principles). Linguists see grammar more as a set of usage guidelines, with more of an emphasis on outcome rather than process. The desired outcome is, of course, effective communication.

When grammarians proclaim that a sentence should not end in a preposition, linguists will see this as simply silly, and wonder what they could be thinking of! *The meaning of the previous sentence is perfectly obvious despite the position of the last preposition.* And when a preposition doesn't end a sentence, but the meaning is not at all obvious, formal correctness isn't much good. Once again, a group of specialists (grammarians) have turned what was originally a goal (effective communication) instead into the fastidious application of rules.

When it comes to public understanding of knowledge, most of technical writing, regardless of its "formal correctness," does not communicate the meaning of its content very effectively. Specialists are often aware of this, and proud of the fact! They blame the public for not having the intellectual skills of experts, which they see as the public's own fault. On the other hand, specialists don't particularly want to educate the public because their cognitive advantage makes is very difficult for novices to hold them accountable – a little bit of wanting the best of both worlds!



The grammatical goal for the Public Information Officer should be to get messages out there that contain both accurate reporting and meaningful content. When it comes to an example of something "the public has a right to know," this is it.

BASIC GRAPHICS[1]

My favourite reading materials as a boy were “classic comics,” the comic books devoted to bringing some of the great novels to the attention of younger readers. Since then I have read similar comments from a number of other authors, so my experience was not unique. Jump forward 60 years, and I discover two other series with similar intentions for adults. The “For Beginners” series and the “Introducing” series were formerly published separately, but are now owned by the same company.

I would call these types of books “illustrated narratives” or “graphic narratives,” but the publisher prefers the term “Documentary Comic Books.” In any case, they are the adults’ version of classic comics. They cover science, biography, religion, political philosophy, and popular culture, and they really do give very good overviews of their topics. One of the reasons they are so appealing is their superb illustrations – their comic book style of caricature is both engaging and humorous. Public Information Officers could learn a great deal from these two series. It is possible to illustrate the concepts of “chaos,” “empiricism,” “logic,” “quantum theory,” “time,” “linguistics,” “mathematics,” “cyberspace,” “semiotics,” "science," “artificial intelligence”and many, many more.

The types of illustrations that are appropriate for Knowledge News Releases include diagrams, pictures, charts and maps. Each can complement different kinds of concepts, so the choice of use depends on what the textual content is attempting to impart. Furthermore, there is no necessity to rely exclusively on one type of illustration per module either. More than one illustration may be appropriate, and the types of illustrations may be the same or different. There is, strictly speaking, no “correct” or “incorrect” form of illustration – appropriateness depends on the two previously mentioned factors: the content of the knowledge, AND the requirement to resonate with the public’s social psychology. As the “Beginners” and the “Introduction” series illustrate, this is all entirely do-able.

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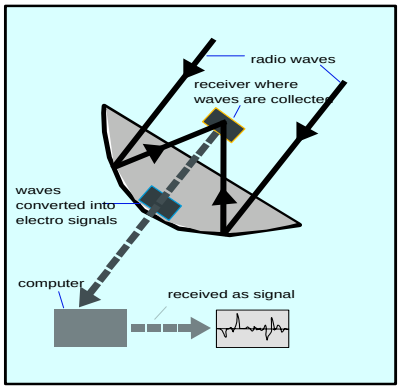
[1] Eric K. Meyer, *Designing Infographics*, Hayden Books, 1997

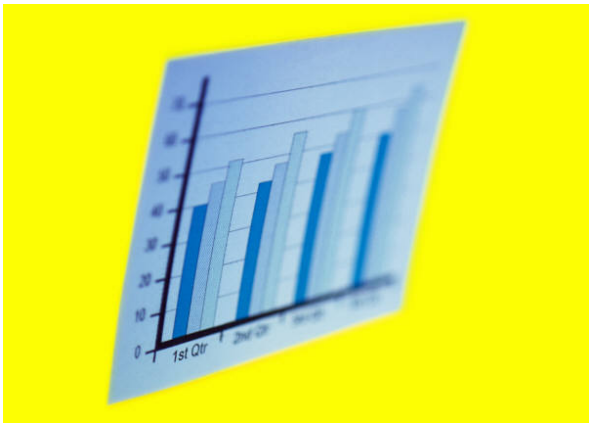
The four prototypical graphical forms are diagrams, pictures, charts and maps.

Diagrams are basically minimalist illustrations.



Pictures are more fulsome visual representations.

Charts depict numerical relationships by way of tables of figures or graphs.



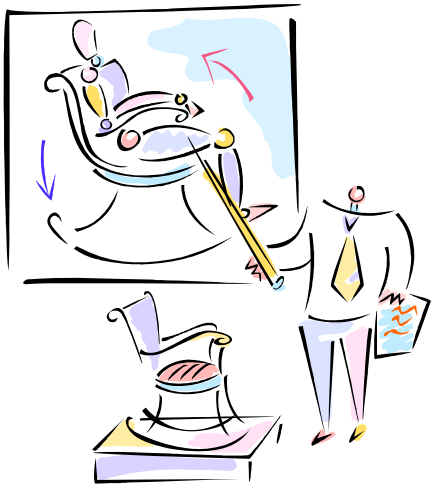
Maps show the conjunction of various features.

There are many sources of online clipart for illustrative purposes. The more “obvious” an illustration is of the concept it is supposed to represent, the better choice it is. However, there are times when nothing you can find is exactly what you want. Either settle for an approximation, or commission a graphic artist to draw what you want, or do the illustration yourself. In the case of diagrams in particular, I often have to resort to this last option myself.

Diagrams

A diagram is a figure consisting of a line drawing that illustrates/outlines/explains the structure of parts and/or the function of processes, i.e., how something looks and/or works. The word "diagram" was coined between 1610 and 1620, from the Latin word "diagramma," meaning "that which is marked out by lines." These days we call many of these diagrams "schematics" because they depict "the scheme of thing."

Concepts, whether conveyed in words, sentences or paragraphs, often do not, by themselves, provide enough for a person to understand the topic being communicated. This is especially true if recipients of the information are not familiar with the concept at all, or not familiar with some previously unperceived aspect of it. They just don't "see" it, i.e., comprehend. It would really help is they could "actually" see it!

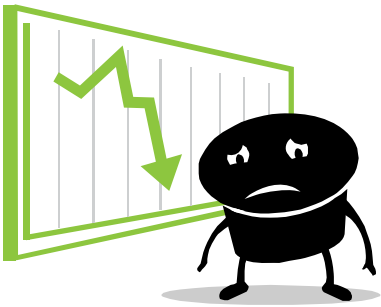


What about the argument that some concepts are so esoteric or sophisticated that no "illustration" is possible. What that contention demonstrates is a "failure of imagination," one of the two failings that Frederich Neitzsche forecast would be the bane of modern humanity. On the other hand, those who are practiced at "metaphoric visualization" will contrive a way to "show" what the concept means by depicting prototypical parameters.

What this means is that a diagram is limited in terms of the aspects which it depicts. There will be much more to the real entity or situation than what needs to go into the diagram. Furthermore, two diagrams of the same entity or situation may be considerably, even radically different. It all depends on the purpose of the diagram. One diagram of a gizmo might emphasize a particular feature; another might emphasize the relationship of several features; a third might emphasize the functioning of the gismo; a fourth might emphasize the colour of

the gismo. Providing each diagram serves the purpose of portraying the chosen emphasis, it has succeeded. If it does not serve the intended purpose, it does not succeed, no matter how well-meaning or sincere the illustrator was.

As mentioned previously, graphics have a "semantics," and this particularly applies to diagrams. Lines convey relationships, arrow heads depict directionality, ascending lines indicate increase and progress, descending lines indicate decrease and regress, etc. These are not "laws of graphics" but they are widely known and observed conventions, which means that readers and viewers will expect that various types of graphic elements will have standardized meanings. If a decision is made to flout any of these conventions, the reason and rationale behind this choice should be spelled out clearly, and convincingly.



As the examples of comic books, graphic novels, documentary comic books, and political cartoons indicate, graphics can indeed be drawn to dipict any of the features or aspects of reality chosen by the illustrator. Furthermore, science and technology writings do often contain technical illustrations demonstrating experimental equipment or operational specifications.

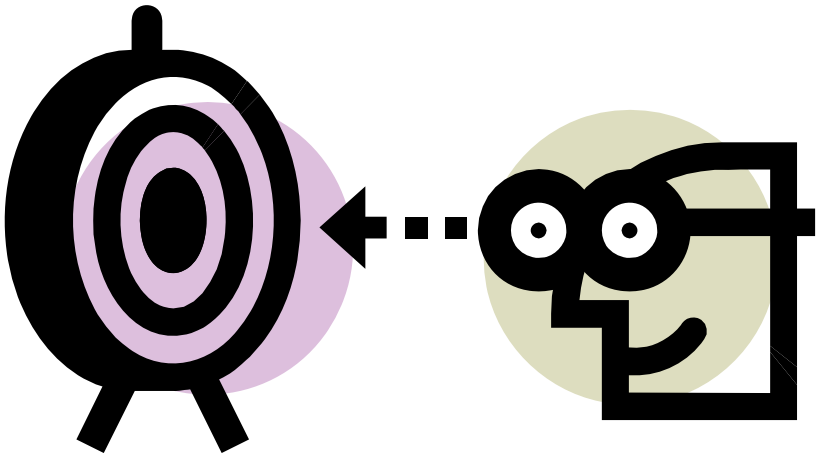
The problem with a lot of these illustrations is that they are NOT basic, but rather quite complicated. When they appear in instruction manuals, it often takes considerable expertise in the topic of the manual to be able to understand the instructions, because they are actually written by experts, for experts. These illustrations are also often staid, unimaginative, and quite humourless (not at all like the above examples).

Knowledge News Releases need to engage public attention as well as be accurate and helpful. That is why testing draft documents on focus groups is such a good idea. If something is missing despite its accuracy and helpfulness, focus group members may be able to suggest something, perhaps humour, perhaps something else – more of that later.

Pictures

A picture is a visual representation of a person, object or scene, for example a painting or photograph. Pictures incorporate more details and/or features than diagrams, but there is no specific rule on which additional features or details to include or exclude. It isn't hard to distinguish between diagrams and pictures, often because pictures contain a higher proportion of colour(s) than diagrams. However, even black & white photographs are can contain many more details than most diagrams.

The premise of "picture preference" is that pictures will display more "verisimilitude" of one kind or another than diagrams, charts or maps. If the purpose of an illustration is furthered by its verisimilitude, then that is a good argument for using a picture of one sort or another. Nevertheless, if verisimilitude is a low priority, and a particular feature or function is the focus of the illustration, then a picture may not be appropriate, it may even be distracting. Therefore, it is important to clarify the purpose the illustration will serve BEFORE beginning to compose it.



When a picture is an appropriate illustration, the next thing to clarify is whether it is details or features that need the emphasis. Details will likely require a picture, that is a photograph or "life-like rendering," whereas features will likely require a picture that is "colourful" or has good depth perspective. Whichever it is, theorizing can only go so far – after that it is the visual impression that will decide whether or not it is a good choice, whether or not it succeeds in its communication purpose.

The term "graphic description" is often used to refer to gruesome details. However, it can, and should equally apply to projecting the potential benefits of new knowledge uses. Another widely-used expression for vividly describing agreeable possibilities is "painting a picture." This

consists of a metaphorical narrative rather than putting paint to canvas, but it is a good metaphor for what follows.

When the benefits of applying new knowledge are suggested to the public, many of them respond with incredulity because they just can't "picture" what the results would be. Could pictures help here too? It should not surprise anyone to learn that I do indeed think that pictures would help. The question is, how?

One communications genre that has solved this problem admirably, even if not necessarily helpfully, is science fiction. "Science Fiction" is an interesting concept. Invariably, the theme of science fiction, regardless of the particulars, is the theme that we should "be careful what we wish for" because almost invariably nature will come back to "bite us on the ass!" This fate usually happens when those involved have exaggerated expectations of the benefits and delusional unawareness of the detriments of new science applications.

There is a logical flaw in all of this though. Science is based on "the facts." Facts have been observed in the past, and recorded for present use. Since they might (and often do) change because of changing circumstances in the future, all forms of future projection (forecasting, guessing, predicting, prophesying, etc.) are, in fact, fictional. The "lesson" in all of this is that, since we cannot actually 'know the details of the future,' it's all speculation. Fortunately much of this speculation turns out to be "operational" – BUT enough of it doesn't that we should all be modest and cautious.

However, we cannot operate a modern Knowledge Society without planning for, and trying to shape the future. Picturing what the result might be, and using pictures to do so, is a part of what Knowledge News Releases are doing. If we claim virtual certainty, we are delusional, regardless of who we persuade. If we go the other way and concede total ignorance, no one with any good sense will take us seriously at all. That leaves the third way, the middle road. THAT is the future we need to "picture," with as many pictures as possible. The concept here is that things are not getting, will never get "perfect;" however we can "picture" improvements, and "painting as many word pictures" of what this will amount to, benefits from actual pictures. The "subject" of such pictures would be "best practices" in whatever field, with the footnote that improvement could consist of spreading the best until it becomes the standard. Can you picture that as the standard policy for Public Information Officers producing Knowledge News Releases? That's an improvement we should all be able to "buy into."

A chart consists of information representing the relationship between variables, either in the form of a table or a graph. A great deal of what Research Reports focus on, is the observational data that comes out of experimentation and/or case studies. These are the details that researchers seem to love, so they have a proclivity to dwell on this data to the exclusion of almost everything else. If they write the report this way the result will be, for most readers except specialists, information overload.

However, tables of numbers do not convey the information that the public is interested in. For one thing, the tables have to be "read" (interpreted), and this is by no means easy. If there is no "guide" to how to interpret the numbers, the result of their display is that most readers find it simply boring.

The way to rescue data from a boring table of figures is to incorporate it into an interesting graph. Graphs can actually "show" directionality, not wait for you to interpret the figures and infer the directionality. The problem with "interpreting" figures is that an increase in magnitude may indicate regression rather than progression, if the indicator is an undesirable one.

Hence, graphs should be clearly labelled, so that ALL features of interest are specifically named (so that readers do not have to "guess at" what it means). Secondly, "visual literacy" conventions should be abided by in the design of the graph. As mentioned previously, there are a number of visual metaphors which graphs should use to represent data, relationships and trends – these visual metaphors are conditioned in the sub-conscious of most viewers, so they will presume that arrow heads give direction, upward lines indicate increase and progress, etc.

The visual literacy elements should also be used consistently throughout a news release. Don't make a "progress" indicator go "up" in one example and "down" in a later example (at least, not without a very explicit and convincing explanation). For some bizarre reason, some illustrators seem to think that a "creative departure" from either conventions or consistency, is quite alright in the name of "artistic licence" – don't be silly, or abuse the readers' patience.

A familiar metaphor which describes planning for the future, is "charting a course." That is exactly what Knowledge News Releases can enable people to do, namely chart a new course based on the information they receive about research results. This is consistent with the motives of the public regarding research – they want to know what the purpose of the public investment in research was in the first place, and following that, what benefits do the research results offer to anyone who wants to pursue the matter?

In this respect as well, using charts to illustrate possible benefits, impacts and consequences that flow from research will communicate more to non-specialists than just words, because graphs in particular let people visualize outcomes. Because of the plethora of visual media, the public's cognitive processes often consist of more images rather than concepts.[1] This can be seen in the successive history of personal computer user interfaces. Early versions were predominantly "command based" whereas recent versions are becoming more and more "graphics based." Research shows that this trend has actually altered the social psychology of the majority of users in the direction of image-based cognition.

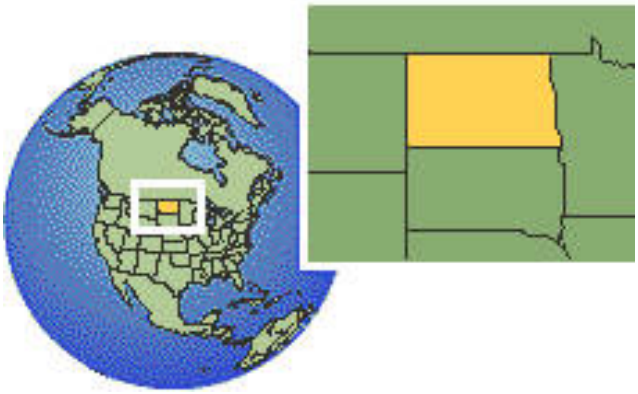
This trend is exactly what Marshall McLuhan pointed out some years ago with television, and the personal computer, and personal, hand-held communication devices, have accelerated the trend. All indications are that the trend will continue. That being the case, it is good communications policy to choose a mode of messaging that clearly resonates with this changing social psychology.

[1] A. Cerra & Christina James, *Identity Shift: Where Identity Meets Technology in the Networked-Community Age*, John Wiley & Sons, 2011

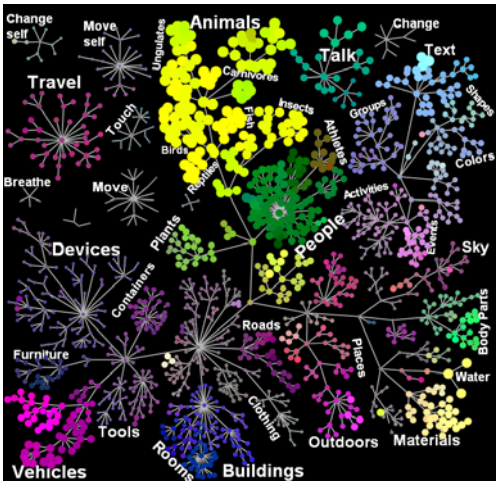
Maps

A map is a visual representation of the conjunction between features, as with geographical features (map of North America), conceptual features (mind map), or organic features (genetic map).
The purpose of maps is to show where things are located in relation to each other – are they close or far away, are they related or unrelated, do they work together or separately.

Some maps are depicted "to scale" (distances on the map are proportional to distances at the phenomenal level), but most are not. Instead transportation maps (and others with a similar mode of design) show the general directionality of routes and the juxtaposition of stops). In either, scale or caricature views, the purpose is to show contiguous features and how to access them.



In the case of conceptual or cognitive maps, what are juxtaposed are ideas within a field (the mind or a discipline). Mind maps are formally organized to reflect the "logical" structure of concepts – they are often used as teaching or instructional tools that show related ideas closer together and unrelated ideas further apart. Cognitive maps depict the way the mind "naturally" organizes ideas, independent of any formal relations between them. In each case however, the purpose is to suggest insights about how ideas function together.

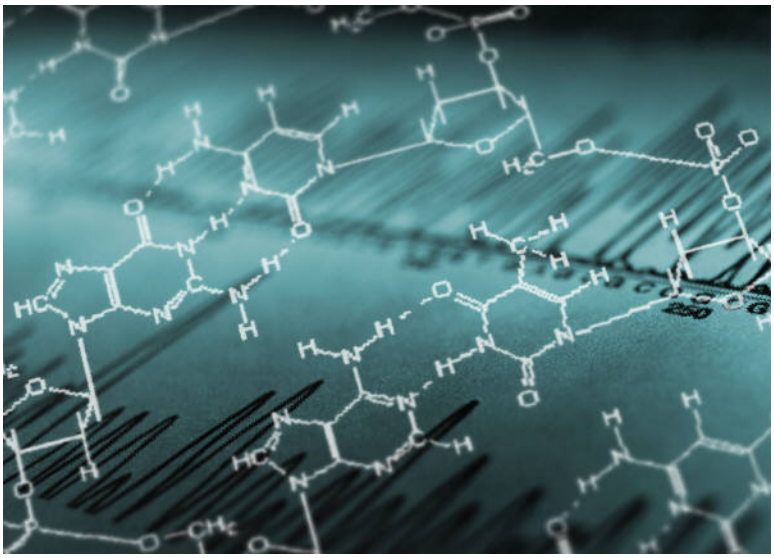


Cognitive Map[1]

[1] Shinji Nishimoto, An T. Vu & Jack Gallant, *First map of how the brain organizes everything we see*, UC Berkeley, 2013

Genes are chemical compounds that control heredity and functioning within cells and organisms. 100
Biochemistry over the 20th century has been researching the structure and functioning of genes in various organisms, with a view to improving the functioning and correcting mistakes in the structure. Recently the entire human genome was "mapped" in a general sense, and explorations are now continuing on filling in particular details. One of the long-term aims of genetic research is to devise a discipline of "genetic medicine" whereby each individual's particular genetic structure and functioning would be mapped so that any ailments or malfunctions that occurred could be treated with medicines specifically tailored to the individual's genetic features.

Genetic maps display arrays of genes according to their chemical structure. Specialists are required to create, interpret and use them, but in these circumstances they do provide the information that is the basis of genetic medicine diagnosis and cures.



Maps combine aspects of both pictures and diagrams. Given the purposes maps serve, this combination works extremely well. In fact, the development of various mapping techniques has been one of the modern world's "knowledge breakthroughs." Cartographers who mapped various features of the earth's geography assisted crucially in the exploration of the globe, and in establishing the trade and travel routes that are a hallmark of recent history. Since the advent of aircraft and satellites, geographical mapping has been able to take a holistic approach, with the result that many previous mistakes and anomalies were corrected with better data. New observational equipment and techniques are now also contributing to significant improvements in the construction of conceptual and chemical "maps" as well. Adding maps as features of a Knowledge News Release will undoubtedly also help the public to visualize these areas of knowledge much more readily than just textual descriptions.

MODULAR LAYOUT[1]

Documents are more understandable if they are organized according to a particular template which has already been implicitly developed by a wide range of practitioners. This was first articulated by a group of proposal writers at Hughes Aircraft in California in the mid-1960s. This research is known amongst technical writers, but has not been widely accepted in the wider sense that the authors had originally hoped.

My hypothesis about this failure of widespread adoption attributes this to the template's lack of complementary instructions on such topics as Plain Language and Basic Graphics. There is limited advice on using simple language and good illustrations, but no full-fledged practitioner guidelines. Even so, the combination of Plain Language, Basic Graphics, and Modular Layout does meet the requirements for document design that the Hughes Aircraft paper was seeking.

This section therefore outlines the components of a modular layout, so that they can be used in combination with the plain language components and the basic graphics components. This module gives an overview of those components, and the following pages spell out what they amount to, and how to use them.

The most important component, according to Tracey, Rugh & Starkey (the Hughes Aircraft authors), is Thematic Quantization. In plain language, what this means is that modules should be limited in size (i.e., short), specifically a word count that will not run over one and a half pages in length. To determine this size, the authors did a word count of numerous proposals and came up with a very limited range of document lengths.

The second and related component is "topical focus." The idea here is that each module should be devoted to a limited number of themes, preferably just one.

[11] J.R. Tracey, D.E. Rugh & W.S. Starkey, *Sequential Thematic Organization of Publications*, Hughes Aircraft, 1965

Furthermore, the theme should be fully developed within this single module, rather than making extensive references to external material or sources.

The third component of modules is a strong beginning sentence for each module. The ideal start sentence would be one in which the entire argument of the component is previewed, so that readers will know what the remainder of the module will propose and argue. In other words, no surprises, just "telling them what you are going to tell them," and then following through!

The final modular component is a relevant illustration. The illustrations used must directly reflect the textual material in the module. Sometimes such illustrations are easy to find, sometimes they are harder to find, and sometimes you just have to create them yourself.

Thematic Quantization

"Thematic quantization" is a fancy term for "limited number of concepts in a limited number of lines (or pages)." In other words, keep it focused, short and succinct. Because this paper was developed in the context of aeronautical engineering, those who wrote the paper, and those for whom the paper was written, were all familiar with, and probably came to expect output based on controlled observation and statistical analysis. This paper[1] fulfilled those expectations.

The context for the original paper was the writing of engineering proposals. What the authors observed was that the "typical" writing of proposals prior to their paper, had been characterized by poor organization, inept diagramming, and run-on sentences. The result was that many of the proposals drifted around their topics like a loose raft on a river.

Despite these drawbacks however, the development and deployment of engineering themes were usually done in what the authors concluded was a limited number of words and paragraphs. In other words, authors of proposals seemed to employ approximately the same word-count when writing their reports. In almost every case proposals could fit into a 2-page format, and this included illustrations as well as text. This was so consistently found that the authors decided this was a "natural" length for modules, and recommended it as the future standard for module development.

[1] J.R. Tracey, D.E. Rugh & W.S. Starkey, *Sequential Thematic Organization of Publications*, Hughes Aircraft, 1965

Setting a limit on length was only half the battle however. Length of proposals was usually far more consistent than focused subject-matter. Proposal writers were notorious for including numerous irrelevant references, and wandering in and out of the theme that was supposed to be guiding the development of the proposal. Writers would find ways to include their personal engineering preferences, or departmental policies, or the company mandate.

What was lacking was either the skill or the intention to choose a theme (topic) and stick to it. Instead the following practices were prevalent: (1) themes were started, then dropped before completion, then re-introduced in a later paragraph; (2) references were made to ideas elsewhere in the module, or elsewhere in other accompanying material, or elsewhere in sources external to the company. The result would be a continual flipping backward and forward by the reader if there was to be any follow-up with the references. All of this would undermine any intention to focus on the theme of the proposal.

Therefore, what Tracey, Rugh and Starkey decided was to completely re-design both the format and the composition process of proposal modules. Since wandering around a topic is so prevalent, even in engineering proposals, it is safe to conclude that it is the usual way of writing. The method can be labelled “stream of consciousness” technique of writing.

Unfortunately the result is often a very unfocused message, leading to a very unfocused impression in the mind of the reader. This can produce the proverbial “variety of interpretations” that are often offered as excuses for lack of action. The modular approach is designed to overcome both vagueness and ambiguity of messages AND rationalizations for the lack of action.

If messages are straight-forward and recommendations clear and focused, then decisions and choices are the logical implication. This outcome was an obvious advantage for engineering proposals. I am arguing that it is also a desirable format for Knowledge News Releases.

Topical Focus

Besides the “size thing” regarding modules, there is also the “focus thing.” The theme of a module should set the standard for what is included, and what is not included in it. The development of that theme should also be completed within the module, not referenced either to another module, or to an extrinsic source elsewhere. When modules are developed this way they can be read as “stand-alone” documents, rather than having to flip back and forth between modules, or hunt online for outside material. (The references in this document are for copyright acknowledgement!)

Business and management consultants have recently discovered “the power of focus.” It can be summarized with such well-known maxims as “If you don’t know where you are going, any road will get you there!” or “Let’s not only do the thing right, let’s be sure we are doing the right thing!”

Why then, does so much communication meander around rather than getting to the point, or dwell on trivialities that entertain but don’t provide any guidance for action? Sociolinguistics (the sociology of language) provides an answer. One of the primary roles of communication within informal situations, is to simply reinforce the social bond between people. In this context it doesn’t matter what is being communicated, so long as communication occurs.

However, this trivialization of communication developed before the advent of Knowledge Societies. In the present era the conveyance of substantive information is a vital function of messaging – the design and operation of the entire social infrastructure depends upon knowledgeable communication, as does a considerable part of individual welfare.

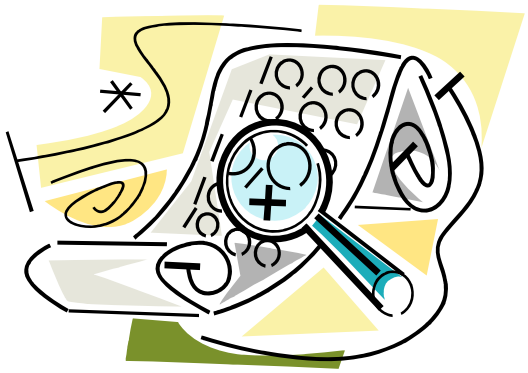
It is therefore time to re-think the role of communication in social relations. As far as Knowledge News Releases are concerned, the content could have profound implications and consequences for society, and offer considerable benefits and opportunities to individuals and groups. Special interest groups have already got this message, and they monitor the news for any indication of advantage or threats to them. One of the reasons they succeed in "taking advantage" of such opportunities when they occur, is that most other people do NOT pay attention to most of what is being communicated, to their eventual disadvantage.

The problem with "paying attention" is that the demands seem to increase continuously! Is it ever possible to keep up? The answer is "YES," but almost no one can do it intuitively or "by the seat of their pants" – you need an effective technique. So, what is the technique?! THE technique has two sides, like a coin. For the topics with a "serious commitment" there is a "framework" that triangulates the relevant knowledge (see next section). For "casual interest" there are Knowledge News Releases that inform in an easy, convenient, concise way.

In either case however, Topical Focus is the approach that will "get you through" each challenge, and "keep you going" all the way. I have dealt with the serious commitment requirements elsewhere, so I will focus on the casual interest here. When it comes to Knowledge News Releases, keep it short, keep it light, keep it interesting, and make it easy to understand – that is REAL focus!

Strong Lead Sentences

Every Knowledge News Release module needs a beginning sentence that summarizes the argument of the entire piece, so readers can decide up front whether or not they have an interest in reading further. It often happens that a reader begins a passage and reads on, and on, and on.... without ever figuring out where the argument or the narrative is going. Reading this kind of passage is like a "magical mystery tour" – it could go almost anywhere, and if you have the patience to "stay the course" you might end up "right there" or "nowhere!" There was a time when professional consultants would provide their services under the same terms – everything was "exploratory" and no promises were made other than "we will do the best we can."



Another "reason" that strong lead sentences are not used, is that the writer proceeds to "explain" that the argument being presented is complex, because the situation being reported on is itself complex. The writer's rationale is that "the writing is only reflecting reality" and therefore the reader must be prepared for some involved explication of the subject-matter. As often as not, that same writer will, a little later in the document, give a summary of "what has been argued so far," and low and behold, it is a simple and short account of the foregoing passage! So, the writer has proclaimed that "short and simple" just can't be done with this topic, and then subsequently given a "short and simple" version just a little while later!

This is where the "de-coding motives" aspect of deconstruction is helpful. Whether a short and simple version of the message will be given "eventually" or not at all, what is being given is the "dense version" with its plethora of details and its convoluted reasoning. The premise the writer is that not only does the reader "need to know" however much is presented, but that there is a duty to just accept the writer's judgment and absorb it. What does this attitude on the part of the writer indicate? What this attitude indicates is an implicit moral judgment that readers have to "earn the right" to know, and the way this is done is to "get to the conclusion by going through the data."

What this tactic of presentation amounts to, is an attempt at epistemic coercion (forced learning), so that readers will adopt the "worldview" of knowledge producers. It is equivalent to the early attempt of automobile makers to insist that every auto owner and driver should also be qualified as a mechanic. Similarly, early aeroplane manufacturers insisted on providing a pilot with every plane sold, on the premise that only those trained by the designers were fit to fly the plane. These are more cases of the contention that "the rest of us are lucky that the specialists are prepared to share the benefits of knowledge, albeit under the right conditions."

If the first sentence of each module summarizes the entire argument presented thereafter, readers can decide for themselves to read further or go on to something else. Some journalists claim that print media already uses this approach. Not really. What print media actually do is use an Interesting, attention-getting beginning sentence. When the sentences used succeed in this goal, the readers do indeed stick to the reading at least part way through the story. However, that first sentence doesn't usually give a précis of the entire story so that readers can, right there, on the spot decide whether to read on or not.

The one place where this pre-view technique IS actually used, is in a live presentation to a group. A number of books providing advice on how to organize such a presentation include this advice. "Outline what you are going to tell them, and then follow through and actually tell them what you promised you would!" This last piece of advice makes an important additional point – as well as a précis, you actually have to deliver on the promise. Sounds like a good piece of advice for Public Information Officers as they craft Knowledge News Releases.

Relevant illustrations are, by the very logic of their name, in a supportive role to the textual material in the module; they are NOT in the lead role, with complementary text. However, despite the clear logic of this relationship, it is amazing the number of times that is seems as if the illustration was chosen before rather than after the text was written.

Once again we are in the presence of a "role-reversal" – illustrations, whose entire raison d'etre is to "illustrate" concepts so that the readers can more adequately visualize them, are now being caste in the leading role, with the text as a "script" for the star performer rather than an explanation for the public.

What accounts for this development? Regrettably, another modern trend is the culprit. In the age of mass electronic media, appearance has increasingly replaced substance as the centre of attention. Hence the maxim "Appearance IS reality!" People are more willing to trust their senses rather than their thinking skills. Part of the reason is that they haven't invested much time or effort into cultivating thinking skills. The other part of the reason is that it is all too easy to just sit back and let the media bring the images to them.

Nevertheless, there are serious drawbacks to this inversion. The sophisticated production and broadcast technologies developed and deployed since the middle of the 21st century, make it possible to create fictional images and present them as "factual" and "actual." Telecommunications media are widely suspected of indulging in this "reconstruction of reality" on a growing basis. Their personnel insist on their rights to non-interference, but rarely acknowledge that they also shun accountability and often responsibility as well.

This is the system, and these are the people that report science to the public as well as sports, entertainment and business. All of journalism is conditioned by advertising revenues and advertisers' concerns. That, together with "putting up a good appearance" leads to more attention to image and less on conflicting concerns.

Let's "illustrate" all of this with an example: There is a consensus amongst environmental scientists that the current bout of global warming is largely attributable to human impacts. However, the geological data suggests that cycles of global warming have recurred for millions of years, caused by changes in solar flux. Therefore the real cause of Climat Change is the sun itself, not humanity. No "investigative reporter" has tackled this, nor would any have the fortitude to do so. Yet the appropriate policies that should be pursued are very different if Climate Change is attributable to the sun rather than humanity. If this alternative

interpretation is correct, what governments should be doing is implementing very strict and widespread land and water management regulations, rather than mandating minor changes in social infrastructure. Although reporters devote themselves to exposing the scandals of the rich and powerful, a story with profound environmental significance is ignored.

Given the foregoing history, can we reasonably expect that Public Information Officers will be either able or even willing to develop Knowledge News Releases that can be accurate and helpful to the general public? This possibility seems like a tremendous "paradigm shift" that could face many odds. However, it can as plausibly be argued that this could simply be accomplished by a shift in attitude on the part of practitioners. Focusing on the second alternative rather than the first, is an example of acting on a lead indicator (something practitioners can actually do something about).

For those willing to implement this second alternative, how would it affect illustrating?

First and foremost, "the story" is the substance of the knowledge being presented. That knowledge doesn't need to be hyped or exaggerated, nor down-played or ignored.

Second, the illustrations should complement the concepts in the text, rather than clash with them, ignore them, or emphasize the trivial. This can only happen if thinking is followed by writing, and writing is followed by illustrating.

Thirdly, the public wants to know about benefits that the use of this knowledge entails. Check the research reports for any indication of these possibilities, and contact scientific sources if nothing is found in the research conclusions. The future depends on it.

Putting all the components together to create an effective Knowledge News Release is the kind of challenge that requires a re-acquaintance with the basic objectives of the exercise – the "big picture " is where the goals that drive the process are located, and Public Information Officers need to remember that.

This situation is also beginning to gain recognition in Management Science.[1] Since a large part of creating a Knowledge News Release is a "management problem," the "rules" developed by management consultants are likely just as applicable to Knowledge Communication as to Business Operations.

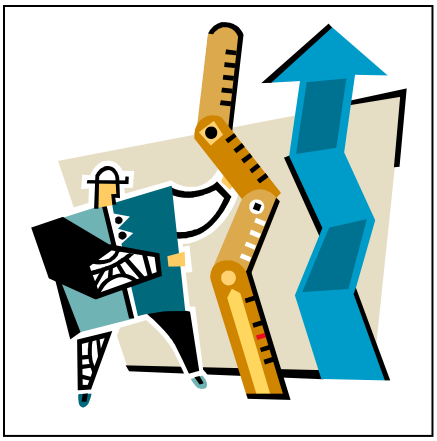
What follows are the "rules" from McChesney, Covey & Huling. The first four are explicitly articulated; the next eight are derived from my content and conceptual analysis from the remainder of their advice. The first cluster of "rules" is based on the chapter of their book titled "Focus on the Wildly Important."

THE WILDLY IMPORTANT
1. No team focuses on more than two WIGs [wildly important goals] at the same time.
2. The battles you choose must win the war.
3. Senior leaders can veto, but not dictate.
4. All WIGs must have a finish time in the form of 'from X to Y' by when.

I have derived the second set of rules from "Act on the Lead Measures." The point of the chapter is that there are two types of measures in organizational performance: Lag Measures are the ultimate results that management is working towards – their accomplishment (or lack thereof) will only become apparent at the end of the change process. Lead Measures are the things that it is possible to influence immediately, whereupon they will contribute towards the accomplishment of Lag Measures.

[1] C. McChesney, S. Covey & Jim Huling, *The 4 Disciplines of Execution*, The Free Press, 2012

ACT ON LEAD MEASURES
5. Identity which Lead Measures affect which Lag Measures.
6. Estimate the level of effort associated with each Lead Measure.
7. Prioritize Lead Measures and commit resources to change.
8. Continuously track and record Lead and Lag measure changes.



The third set of rules was derived from the chapter titled "Create a Cadence of Accountability." The premise of this chapter is that teams working on change have to be kept reminded of their performance, so they know when they are succeeding, and when they are not.

ACCOUNTABILITY PRACTICES
9. Make indicators simple and obvious.
10. Always point to Lead and Lag connections.
11. Relate changes to mandate/goals.
12. Use feedback from changes, to retrofit efforts as necessary.

Without too much contrivance, we should be able to apply these rules to Knowledge News Releases quite readily.

The Lag Factor in communicating with the public is the ultimately successful reception of the message, and its "use" in one of the forms previously mentioned. The Lead Factors are the **process** of message creation, and the knowledge **product** released to the media. As Management Science has confirmed, the ONLY way to accomplish the Lag Factor is to successfully implement the Lead Factors.

The Lead Factors can be approached in terms of a Framework, an Outline, Coherent Concepts, and Consistent Terms. The Sections to follow will tackle each of these themes.

Having a framework enables people to cope (or not) with regular requirements, and adjust (or not) to changing circumstances.

The best way to introduce this concept is to make the case that a "framework" amounts to a "personal paradigm" that is used to situate one's own outlook and activity within a wider context. According to one school of European sociology, all people live within a "life-world," which is just another word for a personal and group framework. We all have a framework of one kind or another. If you "don't think you have a framework" that is because it is implicit rather than explicit – which means you are unconscious and unaware of the meanings that are guiding your actions. The reporter and author Arthur Koestler called such people "sleepwalkers" – they are going through the motions without knowing what they are doing.

No professional should be without a conscious, explicit framework. How do you acquire a framework? You "build your own!" What is worthwhile doing, and why? How do you decide, and choose, and implement those alternatives? What are your plans, objectives and constraints, both short-term and long-term. Each and every one of these can be a part of one's framework – it's up to you. It is, however, a very good idea to develop a framework that will enable you to cope with AND adjust to the many changes you are likely to encounter in this era of innovation and surprise.

So much for the generalities – now down to the specifics. Science and technology are both based on the acquisition and application of knowledge. Since the Enlightenment, both the rate of knowledge acquisition and application has been steadily increasing. When considering both acquisition and application of knowledge, there is always a "down-side" as well as an "up-side" to these processes.

When some people acquire knowledge but others remain ignorant regarding that knowledge, the second group won't know about certain opportunities or threats that the knowledge implies. Similarly, when some people implement knowledge and others don't, the differential consequences could be quite dramatic. There has been a significant appetite on the part of the public for knowledge throughout the modern era. The distribution and benefits of that knowledge have always been very uneven. At some point in the accumulation and application of knowledge to social processes, the basic nature of society and social relations will be altered to a permanent condition of reliance and dependence upon knowledge inputs.[1] That point occurred in "modern societies" in the 20th century, during World War I.

[1] Nico Stehr, *Knowledge Societies*, Sage Publications, 1994

Knowledge accumulation and application have profound consequences, both personal and social. Knowledge of the consequences of diet and lifestyle enables those who use it to have healthy, productive, long lives, while those who don't use it will lead unhealthy, disabled, and shorter lives. The social costs of the latter, in terms of health costs and lost productivity, are now beginning to become major social burdens and expenses.

Given the demographic changes occurring world-wide, societies can no longer afford a "laissez-faire" approach to knowledge dissemination and utilization. The majority of social problems experienced these days come directly from what the Anglican Book of Prayer calls "sins of omission" – things that do need to be done, by individuals, groups and governments, are not being done. Over the next generation or two, governments at all levels will be literally driven bankrupt by the increases in the expenses of social assistance programs, IF people do not start employing the available knowledge to avoid or rectify personal health and social dysfunction problems.

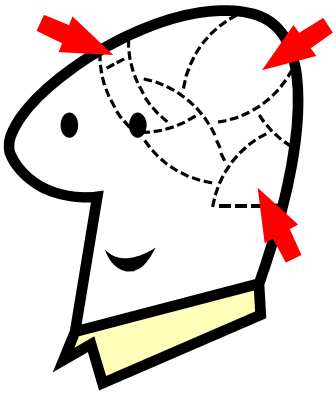
Now consider the role of Public Information Officers – their responsibility is precisely to disseminate knowledge to the public for the purposes of utilization. If they are not disseminating knowledge to the public, but instead organizational propaganda, they are thereby performing a reversal of roles and becoming Public Disinformation Officers.

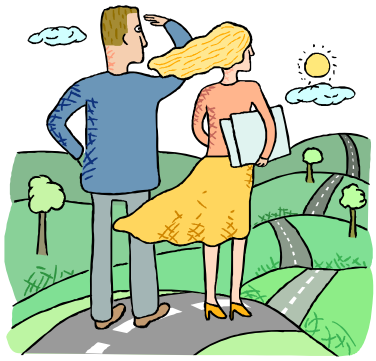
The more the Internet users can adopt the approach of Radical Transparency, the more likely that "knowledge will out" regardless of any attempts to the contrary. The framework for all of this has got to be "giving the public the benefit of the doubt" and supplying them with as much useful information as possible. In the process, every message should be accompanied with a reminder that "non-use" of knowledge has the consequence of adopting fatalism as a governing attitude. Almost every problem aired these days is a direct result of NOT applying knowledge, and that is the direct result of a combination of complacency and fatalism. We can all do better, especially those of us who can facilitate knowledge dissemination and use.

An outline is a conceptual overview that is created to guide further document development. This book is being written with the guidance of an outline (see pages four & eight), as are many others. Without an outline it is difficult to keep track of what has already been covered, and what remains to be covered.

Outlines are often (usually) written in point form. This is both the simplest, and the easiest way to proceed. If there are significant relations between the points however, more may (will) be required. Connecting lines, aggregating boxes, and various colours may all be needed to clarify the thinking that will guide the development of the final product.

The outline shouldn't be so complicated that it will be difficult to decode at some future reading. Even more important, the knowledge product must resolve any complexities in the background thinking, thereby contributing to a clear presentation.





Some people, especially those who consider themselves "creative," prefer to simply "wing it" and write down whatever comes into their minds at the moment. This may work for the writing of fiction, but it is a poor practical when dealing with "the facts." Outlines enable a writer to (1) make sure that all essential points are included, and (2) to ensure that irrelevant points are excluded.

How complete does an outline have to be? There is no measurable standard, but the closer it is to "exactly" what you want to cover, the better. Outlines are if you like, the prototype of the final product. They can be written in "starts and fits" rather than all in one sitting. They can also be revised as ideas occur to you. Changes may range all the way from a single word, to a phrase, to a fundamental re-write.

What often happens is that a word or phrase near the end of the outline will suddenly lead to the realization that previous parts of the outline need to be changed. Perhaps a contradiction is recognized, or some implication emerges that should be spelled out.

When you are satisfied that the outline is complete enough, and you start on a first draft of the final product, more changes may occur to you, particularly with wording. When sentences are actually composed and then read, original plans for wording may not prove that effective. This is often grammar, but since grammar includes "the logic of the argument," it must make sense.

After the first draft has been written, you need to go back and re-read from beginning to end. Once again, ideas or words may not seem as appropriate as when the writing was being done. The process of revising and re-reading can sometimes go on for quite some time. It ends either way when "you've got it right" or "you can't seem to do anything more with it." One way to think about all of this process is that everything is an "outline" until you settle on a completed version. Each re-iteration just further completes and "firms up" the product.

When the whole process becomes exasperating, it is time to take a break and do something else. It's never going to be perfect, but you can achieve "good enough." That will happen when you have made sufficient progress to "go with it," or when no further progress is occurring and it is time to "call it quits."

Coherent Concepts[1]

Conceptual thinking is the basis of rationality, and the key to both planning for the future and learning lessons from the past. Words are "symbolic tags" that society assigns to specific people, objects, events, relationships, etc. "Conceptualizing" involves grouping these symbolic tags together into either more general classes or more specific classes. So a lawn chair, and an easy chair, and a kitchen chair can be grouped into "chairs," and chairs can be grouped with tables into "furniture". Or, chairs can be grouped into "lawn chairs" and "easy chairs" and "kitchen chairs," and lawn chairs can be grouped into "wooden lawn chairs" and "plastic lawn chairs" and "aluminium lawn chairs."

From this description, the process seems simple enough. However, many people for instance, are members of multiple groups; a person can be a worker, husband, father, son, baseball team member, etc. Similarly with things: a piece of paper can be a legal contract, a historical document, a piece of parchment, a keepsake, etc. So, when reference is made to a particular piece of paper, it is not always clear which aspect of its identity is being referred to – is the piece of paper being referred to, significant as a contract, or as a keepsake? When talking about a certain person, is it that person's profession, age, race, political beliefs, or something else that is being focused on?

Concepts simplify reality – if we are looking at height, we are ignoring other characteristics. Yet those other characteristics still exist, and in another conversation a completely different characteristic might be the centre of attention. Despite the complexity of reality however, cognitive capabilities have their limits, so concepts are the symbolic tools we use to deal with reality since we can only deal with "seven plus or minus two" pieces of information simultaneously. We do not have infinite memory storage capacity, or extendable cognitive processing capabilities. Fortunately our technologies (language, writing, printing, telecommunication, and computing) have enabled us to bootstrap our cognition into artificial extensions that have far fewer limitations than we do as a species.

Such extensions are a great boon to humanity, but they have their "down-side" as well as their "up-side." We still have to design, deploy, operate and control our artifacts (technologies). We often cannot anticipate what the implications or consequences of widespread, prolonged use of technologies will be. We do have a tendency however to become enthused with new technologies, and as a result to over-use them. The result of over-use is that the original benefits that were sought turn instead into detriments which may eventually offset all of the

[1] John Wilson, Thinking With Concepts, Cambridge University Press, Cambridge, 1963

earlier gains. Manufacturing is great, but its pollution side-effects now threaten the environment. Electronic media are a source of information and entertainment, but they soon began to invade our privacy and distort our perceptions. We have not yet learned to recognize when "enough is enough" and limit our extensions to their beneficial ranges.

It was the above recognition that led to the development of "systems thinking" to explore the implications and consequences of complex relationships. Below the apparent chaos of details, there are usually "systemic parameters" (regularities of behaviour) that persist despite superficial appearances. This being the case, systems thinking has to be a core part of any wisdom we develop to recognize when "enough is enough," and deal with it.

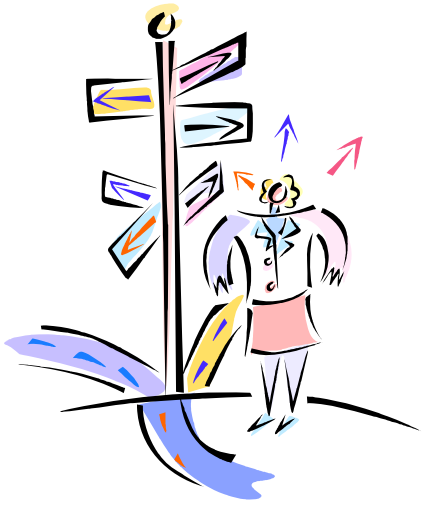
Because of our limited mental processing capabilities, it is easier to think about topics if we stick to a short a list of concepts which complement each other. If we communicate those concerns to others, the recipients of that information will also find the messages easier to deal with if the concepts in use are limited, and used coherently. The more synonyms used for a particular concept within a specific conversation or communication, the likelier it is that this symbolic diversity will simply confuse others.

The same is true for communicating knowledge to the general public. Using the same concept, in the same way, is much more likely to resonate with the public than switching aspects of the reference without telling the audience in advance. These types of tactics may impress aficionados, but they leave the general public with the impression that the motive is to "show off" rather than to inform. When it comes to messaging for the public, keep it straight and simple.

Conceptual consistency refers to “meaning the same thing throughout a piece of writing.” Consistent terminology refers to “using the same labels throughout a piece of writing.” Writers are often reluctant to “repeat themselves” too often, so they use a variety of terms that are supposed to refer essentially to the same thing. If these choices are all in widespread use, and are recognized as equivalents, then a little variety will still enable the delivery of a consistent message. On the other hand, if the substituted terms are NOT in widespread use, or are NOT recognized as equivalents, the message recipients immediately begin to wonder if there has been a change of topic part way through the piece.

Writers, or others thoroughly familiar with a topic, often seem to forget that those unfamiliar with the specifics of a topic have no way of knowing whether a change of terms indicates a change of meanings or not. Protests from writers that “there is nothing to worry about” are especially annoying when a change of terms DOES indicate a change of meaning as far as the readers are concerned, even if not appreciated by the writer. Quite often the terminological distinctions that the audience makes are just as intricate as those the writer makes, but very different! These are the circumstances that led C.P. Snow to refer to the opposing mindsets of scientists and the public as “two cultures.”

Knowledge News Releases are short anyway. Using more distinct terms in such a piece of writing than is absolutely necessary, just adds to the “cognitive load” (difficulty of processing) of the audience, with little or no substantive advantage from the point of view of “conveying information.” This will lead any sensible person to conclude that, once again, someone is trying to show off! By now is there anyone not familiar with the adage “Less is more”?



All of the above implies that “consistency” is a primary value for the public. Some writers and “other creative types” regard this concern as “over-done and excessive.” How do we adjudicate between these two views? In this kind of case, the wider context provides important guidance. The entire modern era has been premised on advocating the need for change and promoting the benefits of change. We are often reminded of the Ancient Greek maxim that “You can’t step into the same river twice” (because the water is changing with every moment of flow). Both the rate and the extent of change have accelerated over the past 400 years, and are forecast to accelerate even more in the future. So that other famous historical maxim that “The only thing that doesn’t change is change itself,” would seem to be proven conclusively! Or has it?

Let’s consider an important example. Those living in modern cities see changes every day: new buildings being constructed, decrepit buildings being demolished, new vehicles on the street, new signs beside the roads, new stores and services opening regularly, older stores and services going out of business, etc. Life in the modern city seems to confirm perpetual change. On the other hand, more of the streets and roads follow the same routes they have for decades. Many of the brands they consume are equally long-lasting. Most of them speak the same language(s) they learned as infants, use most of the same kinds of media as they have for years, and think within the frameworks as the rest of their society.

So, how much change is “a lot of change,” and are we really experiencing overwhelming change? Change is always relative to a stable context. In our case, as well as in almost all other cases, the proportion of stability in our context is much more pervasive than the degree of change in particular dimensions. So yes, there is some change, it can be very disruptive, and it requires adjustment – but with a flexible attitude it can be accommodated, and the key is attitude. By and large we are all in the same boat together. Consistency IS a virtue – creating confusion for the sake of showing off, doesn’t have much to recommend it.

Once the first draft of a Knowledge News Release has been produced, it is a Knowledge Product Prototype that needs to be tested the same way any other prototype should be tested.

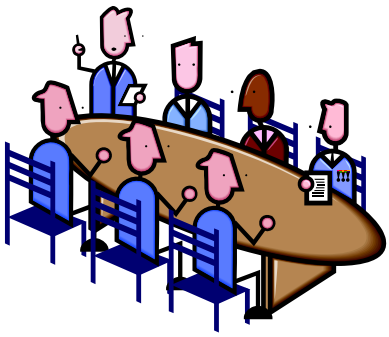
1. The first step is to identify the target audience(s) for the Knowledge News Release. This is a form of marketing research, and in these cases it is essential to "segment the market" so that the particular characteristics and preferences of each segment can be reflected in the version of the news release prepared for them.

2. After identifying the target audience(s), the next step is to prepare a draft Knowledge News Release for them. This may involve wording or phrasing if this particular group has its own idiom, or specific types of examples that the group is likely to resonate with, or the choice of illustrations if the group responds well to certain images.

3. Despite effort made to target the news release to a particular audience, has it actually been crafted appropriately? Can the Public Information Officer assess this before testing it on a sample audience? Yes indeed – Bullfighter software was developed by a world-class consulting firm to test reports that were being prepared for typical clients. Bullfighter scores the document accordingly.

4. Revise as indicated by the Bullfighter software. What this usually indicates is that the words and sentences used throughout must be shorter than what appears in the draft. Change multi-syllabic wording and run-on sentences to make each shorter and perhaps less esoteric, will be enough to achieve a score consistent with public readership.

5. Test the revised news release on a target audience focus group. A select group is assembled and presented with the message. They evaluate according to the proclaimed mandate AND their own world-view. They are allowed to discuss, disagree, collaborate and brainstorm, without any criticism. A consensus will emerge, or can be implied.



6. Revise news release again if Focus Group suggestions so indicate.
7. Re-test on Focus Group, using same guidelines as previously.
8. Release message when understandable and agreeable to Focus Group.

The largest target audience for a Knowledge News Release is the general public. Given this particular knowledge product, the "market" you are aiming for is "the marketplace of ideas." Even this market (some would say "especially this market") is segmented. Not all sections of the public will be receptive audiences for every piece of new knowledge presented via the mass media. News of Mars or the Moon may interest astronomy buffs. News of an effective pain killer may interest arthritis victims. Knowing which news appeals to which public is a good place to begin, OR a good goal to set.

Once the appropriate market segment(s) have been identified, a careful review of the evidence of their proclivities and preferences should be reviewed if you have it, or acquired if you do not. Social science research and marketing research resources are available, very often online. If not, knowledgeable contacts must be located and/or approached.

The questions are always of the same type: What is the segment's age range, predominant gender, income range, housing arrangements, media preferences, and expenditure patterns.[1] This kind of information will enable a Public Information Officer to create a good working profile of the group(s) to be appealed to.

It wouldn't hurt to review such findings with a friend, acquaintance or contact with some knowledge in this area, to get feedback on the profile created.

[1] Andrew Abbot, *Methods of Discovery*, W.W. Norton & Company, 2004

Draft for Target Audience[1]

Once the target audience has been identified and their profile created, it is time to craft a first draft of the Knowledge News Release. All the topics and considerations broached previously in this book and now ready to be drawn on. If not already done, read and understand the Research Findings to be reported on. Summarize these findings AND give some thought to what kinds of benefits they could conceivably provide to prospective users of the knowledge. If there are wider or more profound implications or longer-term consequences of implementing the knowledge, spell these, not as a scare tactic but as a cautious reminder.

Craft a good beginning, middle and end for the message. Re-read these components carefully, to insure that there are no holes or contradictions in the argument. Choose or draw an appropriate illustration, something which picks up on the predominant theme or augments one of the examples used.

Do a little role-playing: pretend you are one of the target audience recipients of the proposed message; given the profile you have created, is this message really something such an audience member would like to know; if yes, does the message provide enough information that it will be consider useful; if no, what additions or changes would be needed to make it so appealing?

And again, check with someone who either is also a member of the target audience, or someone who has studied this audience enough to offer a judgment on your message.

[1] M.B. Cherney & S.A. Tynan, Communicoding, Penguin Books, 1989

Analyze Draft with Bullfighter[1]

Unless advice can be understood and used, it is usually consider worthless. Plain Language is a good instance. Advising writers to choose "shorter words," "shorter sentences," and "shorter paragraphs" isn't very helpful unless there is a specific way to rate the writings you produce. The consulting firm Deloitte apparently had problems with its Reports, so staffers developed an application that could be run on word-processor documents. By clicking on the "Bullfighter" icon when the document was open, the software used a specifically prepared algorithm to rate the "reader inclusiveness" of the word choice, sentence length and paragraph length.

If the rating from Bullfighter software was in an acceptable range (that is to say, would be easily understandable by the target audience), then the draft could be used "as is." If not the writer would review the draft, word by word, sentence by sentence, and paragraph by paragraph. Multi-syllabic words would be replaced by shorter ones. Long sentences would be sub-divided, as would long paragraphs. The Bullfighter would be run again. If the changes had been made diligently, the second draft should pass the test – if not additional "shortness" must be edited in, until Bullfighter gave a "passing grade."

This process is often a very humbling one. Writers love their own eloquence, however long-winded and elaborate it is. Bullfighter says, "NO!" So the "shortening exercise" is undertaken, once, twice, thrice, or however many times are required. When the goal is finally achieved, a re-reading is both gratifying and disappointing. It wasn't really that hard, but the subtlety is gone. This is the time to remember Whitehead's judgment, and move on. It becomes easier.

[1] Bullfighter software
http://www.commerce.uct.ac.za/Commerce_IT/Support/Utilities/Files/Bullfighter/bullfighter.pdf

Test on Target Audience Focus Group

The Focus Group is a representative sample of the larger population (i.e., the target audience). It may be chosen randomly (which social science researchers prefer and recommend), or it may be chosen to specifically include certain sub-sections of the target audience. Random choice is supposed to assure that the small sample was not chosen in a biased way. This, in turn, is supposed to assure neutrality, and be an accurate reflection of the larger group.

On many occasions however, those seeking answers would be more pleased with results from specific segments of the target audience, because they seem like better sales prospects. In other words, those seeking answers are specifically looking for the kind of bias that would more likely lead audience members to make a favourable choice (favourable to the vendors that is!).

This is not "disinterested research" but rather a preliminary survey of marketing prospects. Any member of the target audience who might NOT be "interested" is of no interest to those seeking these kinds of answers. The same would apply to knowledge products. Those committed to poor dieting habits are not likely to shine to "health food news." The young are rarely interested in the concerns of the elderly.

The Focus Group leader should confirm that there is a receptive audience for the Knowledge News Release of the type being contemplated. Ask participants to give their rationale for their interest in the topic, and what kind of story they would like to hear in this area. Present the draft. Welcome all feedback, but only commit to using the good stuff.

Having made a transcript of the Focus Group session, you are now ready to revise, if the discussion so indicated (and remember, you are only using the "good" suggestions). As with re-reading the first draft, re-read again with the Focus Group discussion in mind. Take all comments received at face value, even if they were presented factiously (some "joke" comments turn out to have real value, despite their intentions). Make whichever changes seem appropriate, re-read, and decide when it's "good enough."

Re-convene a Focus Group, the first one, or another similar one. Do you want their judgment on improvements, or a fresh set of eyes? You decide. Again, after the process, write other revisions if indicated – hopefully not too many. By now you should be getting a sense of "what will fly and what will not." With this second draft, revisit your original contacts for second opinion on your second effort. They too should begin to get a sense of "what works and what doesn't."

Before a final release of the piece, role-play again, this time as a severe critic of the material and the suggestions in the Knowledge News Release. How will the "nay-sayers" respond, and will there be any validity in their comments. If this perspective brings a new concern, address it. After that, time to go to the media. Select those who are more likely to use the piece, and provide any background information you know or suspect they will want or need. Follow the story through the coverage, and watch for any responses, positive or negative. Take note of any lessons the process teaches, to be prepared to do a better job next time.

CONCLUSION

We live in Knowledge Societies in which the availability and application of knowledge is an indispensible aspect of our daily lives and ongoing wellbeing. A few basic observations will confirm this state of affairs, yet most people seem blissfully ignorant of the implications and consequences. In terms of lifestyle however, changes are occurring and being recognized.

Individuals, groups and institutions need knowledge inputs every day to be able to function effectively. In many cases, despite the availability of knowledge, most individual, groups and institutions do NOT function effectively, because there is a resistance to applying that knowledge. Nevertheless, this resistance is slowly being undermined as knowledge accumulates.

Knowledge Societies rely on a continuous stream of new knowledge to keep ahead of the problems that large scale and fast pace involve. Governments invest considerable public funds in producing and disseminating new knowledge. The money represents a public investment in knowledge production and application. Regrettably, the public, whose money funds that public investment, does not get an adequate return on the investment of that money.

The problem, in this case, is that news of the new knowledge is not properly communicated to the public so that they might understand and utilize that knowledge. Researchers are often quite snobbish about their activities and output, with the result that the Reports they release are written by experts, for experts. This book proposes that all publicly funded research have a Public Information Officer (PIO) as part of the research team. The PIO would craft a Knowledge News Release (KNR) to explain each piece of new knowledge in terms the public could understand and use.

Creating an effective Knowledge News Release is a skilled process. The substance of this book gives an overview of the thinking behind, and processes involved as the PIO crafts a KNR. Part One looks at the background information and thinking skills that inform the PIO. Part Two outlines the different parts that make up this particular knowledge product, namely the KNR.

The implications of this proposal, and the remainder of the processes in a Knowledge Society, are also explored. The term “transparency” refers to the “openness” of information sources. More and more information that was formerly private and secret is now being released and broadcast. This enables mutual accountability by disclosing what is happening, where, when, why, and how. The premise behind transparency is that we are responsible for our actions, and owe an account of them when they affect others. As the demands for, and instances of transparency increase, a larger goal is “Radical Transparency,” where everything important is open to disclosure. There are some pragmatic limits to this, but we have a long way to go yet. The push for considerably more transparency seems unstoppable. That is why Public Information Officers and Knowledge News Releases are needed.

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GENERIC PIO JOB DESCRIPTION[1]

A Public Information Officer (PIO) assigned to the task of creating and disseminating a Knowledge News Release (KNR), will possess the following attributes and engage in the following activities. These few observations should be sufficient for this outline. "If the phenomenon under study is generic, a small sample will suffice."[2]

Personal Attributes

- Demonstrates familiarity with domains for which communications will be developed.

- Proficient writing and editing skills.

- Examples of writing related to the respective domain(s) to be written about.

- Active membership in networks of both writers and researchers.

- Demonstrates an understanding of how media operates.

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[1] Thanks to Alex Binkley for the suggestion to include a Job Description

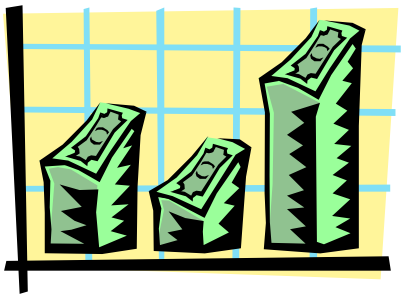
[2] N. Rodriguez & A. Ryave, *Systematic Self-Observation*, Sage Publications, 2002, pg. 7

- Acquaintance with the organizational aspects of research, and the mass media.

Job Responsibilities

- Track Research Reports in the domain of focus.
- Compare notes with others who also track research.

- Practice de-coding assumptions, fielding questions, explaining concepts.
- Identify deep concepts in all read material.



- Think through every assignment – prepare an overview.
- Practice summarization and generalization whenever reading Research Reports.

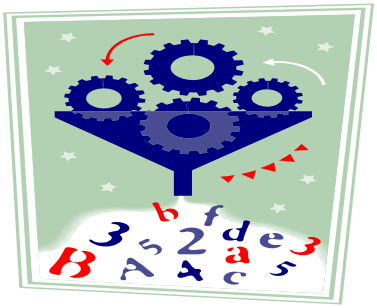
KNOWLEDGE ENGINEERING PROCESSES

feedforward →

Preparation

-Motivation: you gotta really wanna!
-Flexibility: anticipate the unanticipated
-Due Diligence: double-check the rules
-Follow-Through: stick with it until the finish

Deconstruction

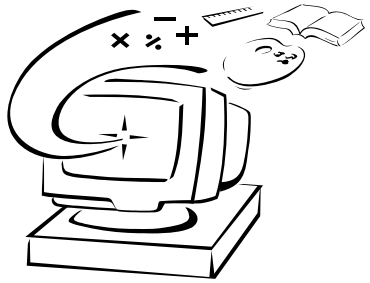


-Discourse Analysis: check your messages!
-Concept Analysis: how do the ideas relate?
-Synchronic Analysis: compare various cases
-Diachronic Analysis: do ideas change over time?

Reconstruction

-Graphical Synthesis: show us an illustration
-Means-Ends Synthesis: go from method to goal
-Pattern Synthesis: find the order within chaos
-Idea-Blending Synthesis: combine to enhance

Application



-Communication: share with those involved
-Field-Testing: give your users a sample
-Roll-Out: prepare people for the change
Follow-Up: learn good lessons for next time

feedback ↑

(This is "a concept and picture graph" created to illustrate the message of the book – Knowledge Engineering at work!)